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An Address
ON THE
FUNCTIONS OF THE SCHOOL CLINIC.

Given at the Opening of the New School Clinic at Birmingham on Sept. 30th, 1926,

BY SIR HUMPHRY ROLLESTON, BART., K.C.B., M.D. CAMB., F.R.C.P. LOND.,
REGIUS PROFESSOR OF PHYSIC, UNIVERSITY OF CAMBRIDGE.

THE privilege of assisting at the opening of the new and much expanded School Clinic in Sheep-street naturally arouses satisfaction at a further step in this progressive city towards the realisation of the ideal of the science and art of medicine—namely, the prevention rather than the cure of disease. Although long recognised in theory, the systematic practice on a large scale of preventive medicine is of comparatively recent growth, and much remains to be done—for example, the prophylaxis of the rheumatic conditions which are responsible for so much crippling and mortality from heart disease among children. This very important subject has naturally received attention from the Ministry of Health, with the result that special lines of action have been recommended and that many school medical officers made particular investigations into the subject in 1924 (vide Report No. 23, The Incidence of Rheumatic Diseases). The Birmingham Educational Committee have been foremost in the initiation of measures for the relief and care of rheumatic, cardiac, and choreic children.

The earlier in the life of the individual that hygienic measures and protection from infection are instituted, the better the prospect of health; preventive medicine is most successful in infancy and childhood, and in Sir Leslie Mackenzie's words "the health of the child is wealth to the nation." It has been estimated that 90 per cent. of infants are born healthy and normal, but some years ago Dr. L. D. Cruickshank concluded that at least 42·5 per cent. of children in Scotland entering school suffered from forms of disease largely preventable, and that in addition 70 per cent. of the children examined suffered from defective teeth; among 262,482 children in elementary schools in London 69·5 per cent. were in 1925 found to require medical or dental treatment, as compared with 82 per cent. in 1915. The Birmingham Clinic Centre makes ample provision for dental inspection and treatment by six full-time and five half-time dentists and one assistant school dentist; in the year ended Dec. 31st, 1925, 105,104 children were inspected; 74,736, or 71 per cent., were found to require treatment, and of these latter 32,257, or 43 per cent., were treated dentally. These figures show the need of systematic inspection and care of children in the pre-school period and justify the criticism that to start inspection only during the school period would be to begin too late; but though an enormous amount has been and is being done by infant and child welfare centres, the conditions make it difficult to carry this out in the same systematic and universal manner as school inspection; school inspection and treatment therefore constitute an efficient and most necessary means of preventing progressive disability.

HISTORY OF SCHOOL CLINICS.

In 1904 the Inter-Departmental Committee on Physical Deterioration recommended that a systematised medical inspection of school-children should be imposed on every school authority, and in the following year some degree of medical inspection was voluntarily established in 48 educational centres. In 1907 medical inspection of children attending public elementary schools was made obligatory on all local education authorities under Section 13 (1) *b* of the Education (Administrative Provisions) Act, and these authorities were empowered, with the sanction of the Board of Education, to make arrangements for attending to the health and physical condition of the children, the cost being then mainly borne by the rates. Under this power arrangements were accordingly made for the medical treatment of school-children by various agencies, such as private practitioners, hospitals, and dispensaries. By circulars and other means the Board of Education pointed out the value of school clinics, and thus the more enterprising authorities were led to establish them. The first dental clinic for school-children was opened in 1907 at Cambridge, where the local education authority made the arrangements for the dental inspection, and the cost of the clinic was undertaken by a private individual. Bradford, in 1908, submitted to the Board of Education the first scheme for a school clinic, the arrangements including provision for the treatment of minor ailments—ringworm, discharging ears, the testing of eyesight, and prescriptions for spectacles. The number of such clinics gradually increased until there were 57 in April, 1912, when the Board of Education then for the first time issued regulations sanctioning grants-in-aid of medical treatment, the total amount of the grant made by the Board of Education for the year ending March 31st, 1913, being limited to £60,000; in 1913–14 the grant was made for inspection in addition to treatment, and in 1923–24 the Board allowed a grant up to £600,000 for the purposes of inspection and treatment. The local education authorities were thus enabled progressively to increase their arrangements for treatment by clinics and in other ways, and there are now more than 1395 clinics provided by 312 out of the entire 317 local education authorities. Further, Section 80 (2) of the Education Act, 1921, laid upon the local education authorities for higher education the duty of providing medical inspection of children immediately before, or at the time of, or as soon as possible after, their admission to certain secondary schools and other institutions, and on such other occasions as the Minister of Health may direct. The local education authorities were also empowered to make such arrangements as may be sanctioned by the Minister of Health for attendance of the health and physical condition of such children and young persons.

This progressive expansion, which there is every reason to anticipate will continue, renders the school clinic system correspondingly more essential as an integral part of the health services of the nation. That it meets a widely felt need is shown by its popularity among the mothers of school-children. The total gross cost of the school medical services amounted in 1923–24 to £1,220,268, or only about one-fiftieth of the total sum spent on public elementary education—a very small premium for rendering education a useful asset and for improving the physical and financial well-being of the nation. The correlation of education and hygiene, or of the mental and physiological righteousness of the rising generation, is due in a degree not adequately recognised by the public—medical or lay—to the Chief Medical Officer both of the Ministry of Health and of the Board of Education, Sir George Newman.

WORK OF THE SCHOOL CLINIC.

(1) Inspection of school-children must be regarded as a most important element in preventive medicine; for the beginnings of disease, often due to environmental influences or to dietetic errors, can be detected and corrected by the following-up undertaken by nurses and the voluntary services of care committees and social workers. Thus the inspection of children in a clinic, where the conditions are so much more favourable for satisfactory diagnosis than in those of the school-room, renders it a health centre from which radiate the principles of preventive hygiene. Parents, who are erroneously inclined to undervalue inspection as compared with treatment, thereby come to realise their responsibilities to their children—for example, last year Birmingham parents were instructed at the clinic with regard to verminous infestation. The school-children, too, partly unconsciously, from the force of example and from the silent influence of their

surroundings in the school and the clinic, become impressed with the necessity of personal hygiene. Children who are dull, backward, or fail to come up to the standard can be investigated in the clinic in order to determine the cause, such as mental deficiency or physical defect, ocular or adenoid lesions, overgrowth, evil environment, or overstrain. The prophylactic value of inspection may be illustrated by the detection of adenoids, enlarged tonsils, and bad teeth which, besides impairing the mental and bodily efficiency, are responsible for a large proportion of the cases of rheumatic heart disease and probably for nine-tenths of the cases of ear disease in children. Reinspection of children who have undergone treatment is conveniently carried out at the school clinics. In 1925 the number of school-children medically inspected in Birmingham was 48,471, and of these 32,257 were found to have dental defects, and 1461 were operated upon for tonsils and adenoids. These figures emphasise the importance of a thoroughly up-to-date equipment for the school clinic.

(2) As a treatment centre, to supplement, not to take the place of, the existing facilities in the area, it provides for the relief of minor ailments and injuries usually requiring daily treatment by nurses under a doctor's direction. This work can be done more expeditiously in a school clinic *ad hoc* than in a hospital out-patient department or surgery crowded with adults suffering from very various diseases. In addition specialist treatment not otherwise locally available, such as of the throat, ear, nose, and eye disease, the X ray treatment of ringworm, and dental conditions, is given; remedial exercises, such as form an important factor in orthopædic treatment, are also available.

(3) The clinic is a centre for research based on observations made during routine work; there is much scope for the study of the conditions and symptoms leading up to disease, and in this way preventive medicine can be much advanced. That the ample material and opportunities for such work have been utilised is proved by what has been accomplished since 1908. Sir George Newman's annual reports on the Health of the School Child bear witness to the numerous individual inquiries which have been carried out, and further advantage will accrue from the special committees set up to investigate the prevention of enlarged tonsils and adenoids, the causation of defective vision, anthropometry, and the problems associated with mental deficiency. The 550 special schools in the country for mentally and physically defective children, which accommodate 45,000 children, offer fields for investigation, and these have not been neglected in Birmingham, which has been so active in the study of mental disease under the leadership of the late Sir Frederick Mott. The ultimate value of education for the mentally defective has been most patiently investigated by Marion Bridie and many others.

(4) The school clinic should serve as the administrative and organising centre of the School Medical Service; in addition it coördinates inspection with treatment and treatment with reinspection and following-up. Thus failure of a child to attend at the clinic is easily detected and efficient steps can then be taken to remedy the default. Records can conveniently be stored there under the supervision of clerks, and registration carried out and statistics worked up. During the year 1925 no less than 34,896 reinspections were made at the Birmingham School Clinic. The clinic also provides opportunities for teamwork by the teacher, medical man, and the parents on behalf of the children's welfare.

STAFFING OF THE SCHOOL CLINICS.

The future and continued success of the school clinic and other public medical services necessarily depends on the attitude of the medical profession, and this in its turn is affected by the training of the medical student, the capacity and resource of the medical practitioner, and the opportunity for the medical practitioner to make his contribution to the public medical services either as a part-time or whole-time officer. There is some m sapprehension in the criticism occasionally made that the Government desires to have a State medical service in which all medical practitioners shall be enrolled. There is, of course, already a State medical service. But it has never been seriously proposed that all medical men should become whole-time civil servants. Indeed, provision has been made for securing the advice and assistance of medical practitioners within their compass and opportunity. That they are not eliminated is obvious from the facts recorded by Sir George Newman, that any private practitioner may enter or not as he pleases the health insurance service, that with few exceptions all the 1770 certifying factory surgeons are private practitioners, that many assist as time and inclination determine both the school medical service and the public health service (most medical officers of health are also private practitioners), and that of the 1800 or more medical men and women engaged by local education authorities in the inspection and treatment of school-children 1023 are in private practice and 821 are whole-time; indeed, it is essential that private practitioners should take their full share in the work of the school clinics, so that they may have more opportunities for detecting the early signs of disease, to become active agents in the prevention of disease, and workers for the collective rather than only for the individual good; it is therefore arranged that in the first instance cases requiring treatment should be sent to the family doctor. For 140 education areas there are 289 women doctors or dentists, and no doubt the advantages of the service will appeal in an increasing degree to women doctors. The nurses employed number 4520, and their actual functions in the school and clinic may also usefully be combined, especially in rural districts, with those of a health visitor. This nurse health visitor looks after the care and welfare of the children of school age and correlates this work with other departments of public health.

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PRESENTATION TO A MEDICAL MAN.—On the completion of 21 years' service Dr. Benjamin Holroyd Slater, of Bradford, Yorks, medical superintendent of the St. Luke's Hospital, Bradford, was on Sept. 23rd presented with a silver tea service from the hospital staff. Dr. Slater said that in the old days the fact that the hospital was a Poor-law hospital acted as an extraordinary deterrent to people entering. The municipalisation of the hospital by the corporation in 1920 had wrought a great change.. It was stated that the work of the hospital had practically doubled since its municipalisation. Last year there were 7050 admissions, 485 births, and operations 2018.

DONATIONS AND BEQUESTS.—Mr. James Albert Fleming, of St. James's-court, S.W., and of Entre Rios, Argentine Republic, bequeathed the following legacies: £1000 each to the Halifax Royal Infirmary, Dr. Barnardo's Homes, and the Royal National Lifeboat Institution.—Mr. J. T. Jackson, formerly of Ilkley and Whitby and now of Jersey, has given £1000 to the Yorkshire Cancer Campaign.—Mr. Thomas Martin, of Pollokshields, Glasgow, who left £19,576, made, among others, the following charitable bequests: £2100 to the Royal Hospital for Sick Children, Glasgow, to endow two cots; £1000 to the Glasgow Royal Cancer Hospital to be used especially for research; £1000 to endow a cot in the Biggart Hospital Home, Prestwick; £500 for the Glasgow Poor Children's Fresh-Air Fortnight and Cripple Children's League; £1000 to the West Highland Cottage Hospital, Oban. The residue to be divided between East Park Homes for Infirm Children, the Maternity Hospital, and the Samaritan Hospital, Glasgow.

An Address
ON THE
FUNCTIONS OF THE BILIARY PASSAGES IN RELATION TO THEIR PATHOLOGY.

Delivered at the Institute of Pathology and Research, St. Mary's Hospital.

BY D. P. D. WILKIE, M.CH. EDIN., F.R.C.S. ENG.,
PROFESSOR OF SURGERY, UNIVERSITY OF EDINBURGH.

(WITH COLOURED PLATE.)

THE frequency of pathological changes in the extra-hepatic bile passages, the amount of disability and suffering to which they give rise, and the large share of the surgeon's time and energy which is devoted to their treatment, invest the subject of the earliest changes from normal function to disease in this region with a peculiar interest and importance. In this, as in other fields of medicine, we advance from the treatment of the grosser forms and full-blown stages of disease to the earlier, less well-defined, and subtler changes, and thus we reach a region where a clear distinction between the normal and the first shades of the pathological needs acute perception and unbiased observation. More and more necessary becomes a knowledge of the normal structure and function of the parts with which we deal, and the surgeon of to-day requires with ever-increasing reason a knowledge of minute anatomy and of physiology. I do not hesitate, therefore, to put before you some facts regarding the anatomy and physiology of the biliary tract which throw light on the morbid conditions with which we meet in the surgery of this region.

ANATOMY.

The gall-bladder averages 9 cm. in length and has a capacity of 50 c.cm. For purposes of description it is divided into several parts—fundus, body, infundibulum, neck, and cystic duct. It possesses a muscular coat which, in the fundus and body, is arranged in a fasciculated net-like manner as in the urinary bladder, but in the infundibulum and the neck in more definite outer longitudinal and inner circular coats. In the neck the circular coat is well developed so as to suggest sphincteric function (Fig. 3, on plate). In the cystic duct the muscular coat is very deficient, especially in the distal part of the duct, and it is represented merely by some irregularly disposed longitudinal and oblique bundles. On the other hand, the fibrous tissue and elastic fibres found throughout the wall of the gall-bladder are specially developed in the wall of the cystic duct. The mucous membrane of the gall-bladder, which is disposed in delicate, closely interwoven folds, has practically no glands. In place of them are found the Luschka crypts which penetrate into the muscularis. The columnar epithelial cells give but a faint reaction for mucus but contain almost invariably granules of bile-pigment. In the neck we find the first of the Heisterian folds which extend down into the proximal part of the cystic duct. These folds are formed by an inward projection of the circular muscular coat. The distal part of the cystic duct has the same structure as the hepatic and common ducts—namely, a wall built up almost entirely of connective tissue and elastic fibres with practically no smooth muscle, and a mucosa rich in specific glands.

The blood-supply of the gall-bladder is unusually free for the size of the organ, and the lymph drainage is remarkable for the number of vessels ramifying in the submucous and subperitoneal coats. The main channels drain through the cystic gland and the glands lying along the common bile-duct, and there anastomose with the lymphatics from the head of the pancreas. The gall-bladder and ducts are generously supplied with nerve-fibres, both from the vagus and sympathetic. Through the latter, by way of the hepatic and phrenic plexuses, it is connected up with the phrenic nerve, thus accounting for the shoulder tip pain experienced in some cases of biliary colic. In the wall of the cystic duct nerve-fibres and ganglion cells are especially numerous, a point of some significance in pathological conditions.

Around the lower end of the common bile-duct is an arrangement of well-developed muscular fibres. These encircle the lower 2 cm. of duct and have been proved to have a definite sphincteric function (sphincter of Oddi). This part of the duct may be subdivided into two portions—the *pars duodenalis*, as the duct passes obliquely through the duodenal wall, and the *papilla*, which projects into the lumen of the duodenum. Whilst both portions are enclosed in muscle-fibres, sphincteric in function, it has been shown that they may act independently and each has a distinct nerve-supply. The sphincter of Oddi will withstand a pressure of 150 mm. of water and, as Archibald has shown, when stimulated by the introduction of hydrochloric acid into the duodenum, will resist pressure up to even 800 mm. of water. Animals possessing no gall-bladder show anatomically a similar sphincteric arrangement, but this will not resist a pressure of more than 30 mm. of water and is probably non-functioning.

Normally the flow of bile into the duodenum is intermittent. The sphincter of Oddi remains in a state of mild tonic contraction and only relaxes to allow the egress of bile under stimulation, usually that of food entering the duodenum. The introduction of peptone or a strong solution of magnesium sulphate into the duodenum leads to a relaxation of the sphincter and a flow of bile. Thus by the Meltzer-Lyon test, we may determine the presence of infection in the biliary passages and less certainly the functional activity of the gall-bladder.

NERVE CONTROL OF THE BILIARY PASSAGES.

The outcome of many experimental researches on this subject may be stated briefly as follows.

(1) Slight stimulation of the vagus causes contraction of the gall-bladder with a relaxation of the sphincter of Oddi.

(2) Strong stimulation of the vagus causes a firmer contraction of the gall-bladder, *especially the neck*, and a spasm of the sphincter of Oddi.

(3) Stimulation of the sympathetic causes a relaxation of the gall-bladder and ducts, and a contraction of the sphincter.

(4) The effect of strong vagus stimulation can be counteracted by an intravenous dose of atropine and augmented by pilocarpine.

The foregoing facts would seem to indicate some not unimportant function for the gall-bladder, and a study of its contents under varying conditions confirms this view.

FUNCTIONS OF THE GALL-BLADDER.

That the gall-bladder is not essential to healthy life is proved by the fact that in some animals—e.g., the deer, the horse, and the rat—it is absent, and also by the large number of human beings whose gall-bladders have been excised, and who thereafter have enjoyed apparently normal health. The fact that its absence can be tolerated is, however, no argument against the importance of its function; it is merely a tribute to Nature's powers of compensation. The gall-bladder has by various observers been regarded (*a*) as a regulator of pressure in the biliary duct system, (*b*) as a secretory organ adding mucus and possibly cholesterin to the bile, and (*c*) as a concentrator and storage cistern for the bile in fasting periods. Probably it subserves all these functions in greater or less degree.

Hamarsten showed that the chemical compositions of hepatic and gall-bladder bile differed markedly, the latter showing a concentration of eight times the former. The experiments of Rous and MacMaster on the bile-pigment content demonstrated that within the gall-bladder the hepatic bile is concentrated ten times. So active is this concentrating function, that

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when the gall-bladder is drained with a tube, the bile in its passage through the gall-bladder to the tube is concentrated two to three times. Hence it is that an organ with a capacity of but 50 c.cm. can store the bile from the liver amounting to 800–1400 c.cm. per diem. These observations have received a further confirmation from the clinical side by the method of cholecystography—a method which depends for its success on the remarkable concentrating power of the gall-bladder. The concentration of the bile and its contained opaque salt, sodium-tetra-iodo-phenol-phthalein, in the functioning gall-bladder causes a dense shadow of this organ to be cast whilst the ducts containing the unconcentrated bile transmit the X rays.

The resorption, mainly of water and salts, occurs principally by the lymphatics and blood-vessels, which must certainly be helped by the rhythmic contractions of the gall-bladder, recorded by numerous observers, and probably also by the respiratory movements. Such resorption explains the presence of droplets of lipoid within the cells of the mucosa (as Aschoff has pointed out, this so-called "resorption fatty change," giving a typical sulphur-yellow spotting to the wall, occurs only in the true gall-bladder and never in the cystic duct). The gall-bladder adds a certain amount of mucus to the bile and secretes mucus freely when inflamed. It should be pointed out, however, that ligature of the cystic duct does not lead to a mucocele of the normal gall-bladder which, on the contrary, contracts on a jelly-like inspissated residue of the bile contained within it at the time of ligature.

Bollman, Mann, and De Page have shown by experiment that a cholecystitis diminishes markedly the concentrating powers of the gall-bladder, this loss of function being in direct proportion to the intensity of the cholecystitis. It is of interest to note that in the rat, which has no gall-bladder, the liver bile contains eight times more pigment than the liver bile of the mouse which has a gall-bladder (MacMaster). Under normal conditions it is almost certain that the gall-bladder never empties more than a relatively small part of its content. Auster and Crohn injected carmine powder into the gall-bladders of animals and found that it took practically a week for it to be evacuated. At operations in the upper abdomen, under all conceivable conditions as regards relation to food ingestion, I have but once encountered an empty gall-bladder. This was an instance of the one condition which apparently can give rise to such a collapsed and empty gall-bladder —namely, a tumour involving both hepatic ducts at their junction to form the common duct (Fig. 4, on plate). Some observers maintain that normally the gall-bladder secretes cholesterin. Naunyn has upheld this view and the observations of Sweet, who found that after cholecystectomy the cholesterol content of the blood was increased and did not reach normal for 40 days, would appear to support it.

FUNCTIONS OF THE BILE-DUCTS.

The bile-ducts have a directly opposite function to the gall-bladder. From the glands in the mucosa a watery fluid is secreted which dilutes the bile. This fluid can be secreted under a tension much above that at which the liver can secrete bile. If the common duct be obstructed and the pressure-regulating function of the gall-bladder be wanting, either from disease or previous operation, the secretion from the glands in the duct-walls will gradually replace the bile which is absorbed and the whole biliary duct system will eventually fill with a colourless fluid, the so-called "white bile." There is no more remarkable experience in surgery than to find in the deeply jaundiced patient, whose every tissue appears impregnated with bile-pigment, the bile-ducts distended with a limpid fluid containing no trace of either bile-pigments or salts (Fig. 5, on plate). The absence of bile in ducts is not due to failure of liver cells to function, as in these cases there is usually a free discharge of bile from the duct within a few hours of drainage being established. The cystic duct appears to have the same functions as the other ducts, to which it belongs rather than to the gall-bladder.

If in an animal such as the cat, the common duct be ligated below the entrance of the cystic duct and at the same time the left hepatic duct be ligated, we have two closed systems of ducts, the one draining the right lobe of the liver and in direct communication with the gall-bladder; the other draining the left lobe of the liver but having no communication with the gall-bladder. If the animal be killed five or six days later the right duct system is seen to be distended with dark-green bile; the left duct system is filled with clear fluid—i.e., with "white bile" (Fig. 1, coloured plate). Rous and MacMaster, who first carried out this experiment, thus proved afresh the great capacity of the gall-bladder for concentrating bile and so relieving the pressure on the liver. There are limits, however, to this concentrating and pressure-relieving capacity and, contrary to the usual experience in this matter, I have found that after ligation of the common bile-duct in the cat the whole biliary system, including the previously healthy gall-bladder, may be found distended with "white bile" (Fig. 2, coloured plate).

EFFECT OF REMOVAL OF THE GALL-BLADDER.

Cholecystectomy is usually followed by a primary biliary incontinence and later by a dilatation of the bile-ducts, sometimes with dilatation of the stump of the cystic duct to form a new miniature gall-bladder. There is later a return of intermittent discharge of bile into the duodenum. In some cases, however, incontinence of bile persists and the bile-ducts do not dilate.

In view of the rich distribution of nerve-fibres and ganglion cells in the wall of the cystic duct, it is a matter of some practical interest to know whether a total or partial removal of the cystic duct influences the tonicity of the sphincter of Oddi and the presence or absence of common duct dilatation after operation.

Clinically, we find every now and then that a patient after cholecystectomy will within a short period have a return of pains not unlike those previously present, possibly also with a transient icteric tinge of the skin. The presence of an overlooked stone in the common duct is naturally suspected, but at a second operation nothing may be found but a dilated common duct. Here we must presume a persistence of spasm of the sphincter of Oddi even after the removal of the main focus of irritation.

In considering the pathology of the biliary passages I shall confine myself to some aspects of the origin of gall-stones and to the subject of biliary stasis.

METABOLIC GALL-STONES.

The Single Radiate Cholesterin Stone.

We owe to Aschoff and Bacmeister the conception of stone formation in the gall-bladder as the result of some dysfunction in cholesterin metabolism and excretion, in the absence of any infection of the bile passages. Contrary to the teaching of Naunyn that a "stone-forming catarrh of the vesical mucous membrane" is the essential antecedent to stone formation, Aschoff has built up a strong case for the single aseptic gall-stone. This stone has the following characteristics: (1) It is in composition practically pure cholesterin, although its central part may be stained with bile-pigment. (2) It is of coarsely crystalline structure. It shows no lamellation, but radiating and intertwining coarse cholesterin columns. (3) It is always single and has been designated the "cholesterin solitaire" or monolith. (Not infrequently other stones may form in the same gall-bladder, but these differ in structure.) (4) It is frequently found in a gall-bladder showing no trace of inflammation. (5) It may be present without symptoms.

Cholesterin is a normal constituent of the bile. It is held in colloid solution determined largely by the presence of the bile acids, and, as Rosin has shown, not only by the amount of bile acids, but by the

FIG. I.

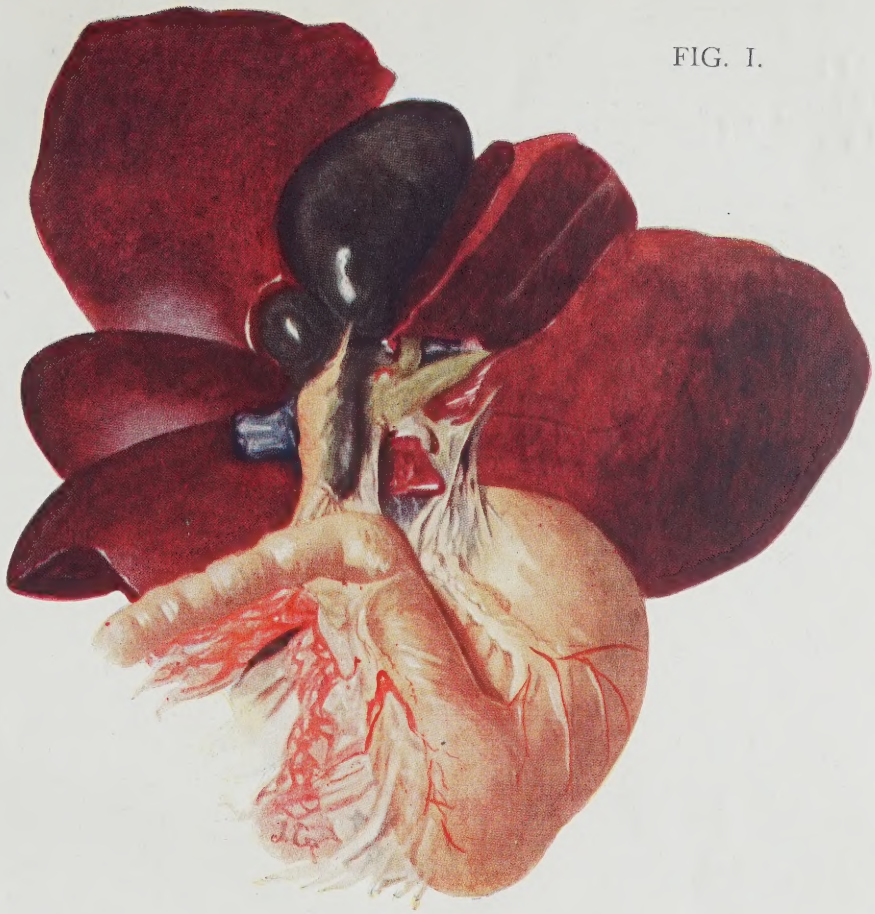


FIG. I.—Condition of biliary passages one week after ligature of common bile-duct and left hepatic duct. Dark green bile on right side, "white bile" on left. (Experiment of Rous and MacMaster.)

FIG. II.

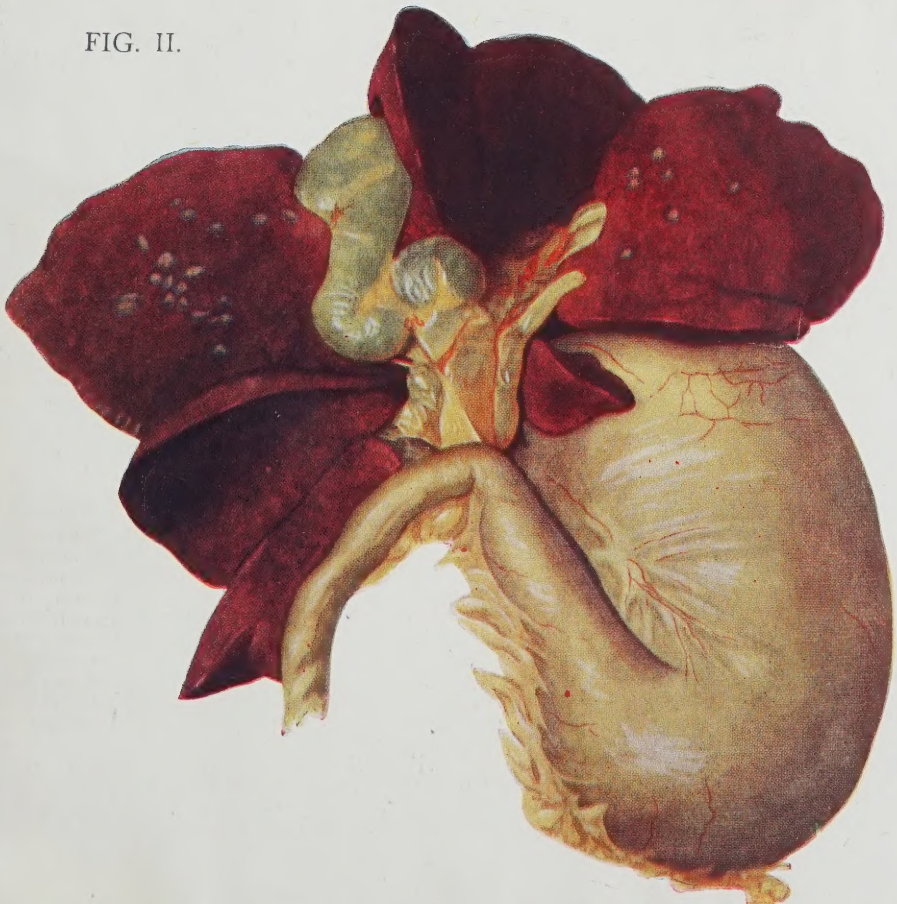
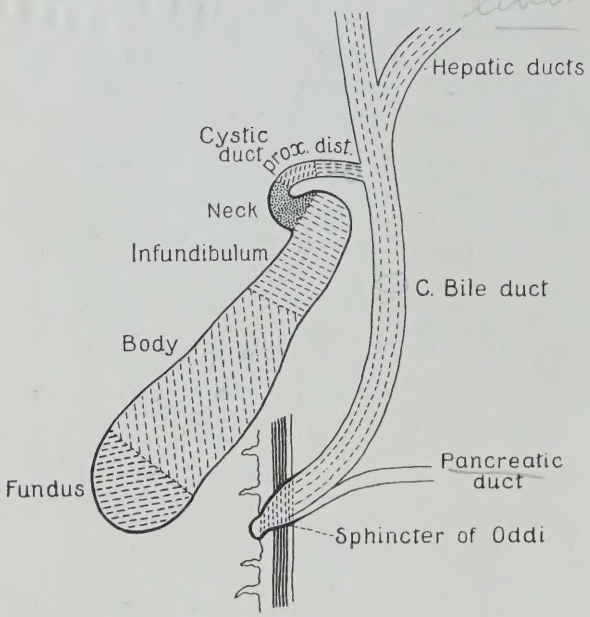


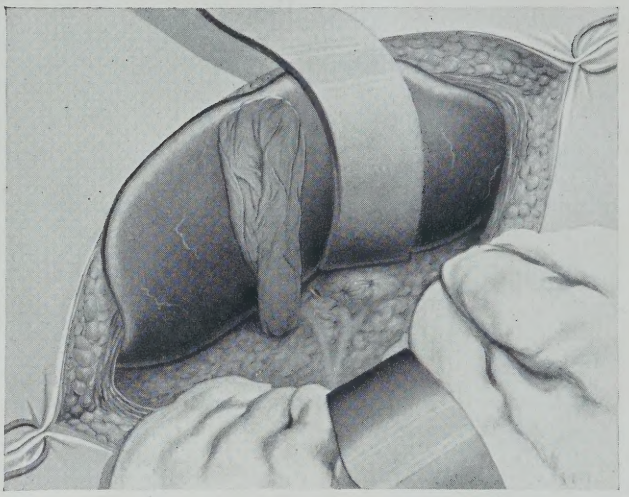
FIG. II.—Biliary passages, including gall-bladder, distended with "white bile" 15 days after ligature of common bile-duct.

FIG. III.



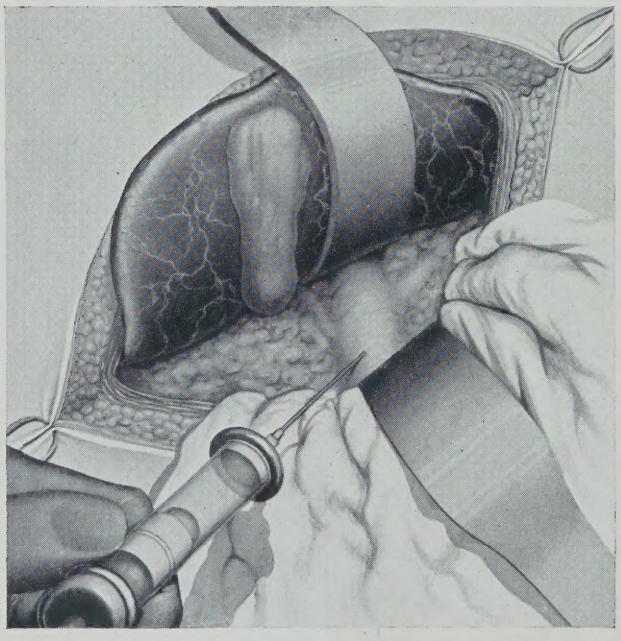
Anatomical divisions of gall-bladder and ducts. The thickness of the outline indicates the relative amount of muscle in the wall.

FIG. IV.



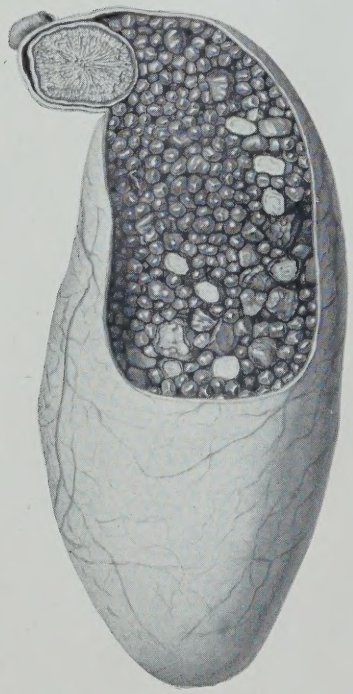
The empty gall-bladder. Tumour involving both hepatic ducts. The patient was intensely jaundiced.

FIG. V.



Aspiration of "white bile" from the common bile-duct. A calculus completely blocked the lower end of the common bile-duct and another the neck of the gall-bladder. Distended bile radicles are visible on the liver surface.

FIG. VI.



Gall-bladder with "combination stone" (cut across to show structure) in the neck and numerous facetted secondary septic stones.

proportions in which the latter are present. Any disturbance of metabolism or of the excretory power of the liver which leads to an increase in the cholesterin content of the bile or to a diminution in amount, or altered proportion of the various bile acids, might lead to a precipitation of cholesterin in the gall-bladder. This would be the more likely if, in addition, any factor leading to exaggerated stasis and resorption in the gall-bladder were also present. Increase of the cholesterin of the blood, cholesterinæmia, has been demonstrated in the human subject during pregnancy, in starvation and other conditions associated with a rapid loss of fat, and in arterio-sclerosis. Whilst an increase in the bile cholesterin cannot always be demonstrated in these conditions, the close relation between the cholesterin content of the bile and that of the blood was shown by Bacmeister and Havers in the case of bitches which had recently borne young but were prevented from suckling. Whilst Naunyn believes that the gall-bladder may excrete cholesterin even in the absence of any demonstrable inflammatory change in its wall, and Rovsing maintains that minute bile cylinders of pigment calcium, shed off from the intra-hepatic bile capillaries, form the nuclei of all gall-stones, the evidence in favour of Aschoff's metabolic theory of origin of the single cholesterin stone is convincing and accords with surgical experience. The unique character of this single stone, its "silent" and afebrile residence within the gall-bladder, distinguish it from other types of which the inflammatory origin is beyond dispute.

There is a second type of stone which would appear to arise as the result of metabolic disturbance—namely, the pure pigment stone, always multiple, of mulberry shape, hard, and brittle with metallic sheen and often brightly coloured, without a distinguishable nucleus and with no trace of lamellation; this type of stone is composed of pure bilirubin calcium. It is found in gall-bladders showing no trace of present or past infective mischief and in many cases of hæmolytic jaundice.

Septic Gall-stones.

The single cholesterin stone or the pigment stones described above may remain innocent and "silent" for years. Not infrequently, however, and especially in the case of the cholesterin solitaire, the stone becomes impacted in the neck of the gall-bladder and obstructs it completely, causing an afebrile attack of colic. Coincident with and dependent on this there is a spasm of the sphincter of Oddi so that bile stasis results in both bladder and ducts. Under such circumstances infection is very liable to be superimposed. The route taken by the infection is difficult to determine; in many cases, however, it would appear to be by the blood stream. The gall-bladder is now the seat of an acute obstructive cholecystitis and muco-pus gradually replaces the bile and distends the gall-bladder.

If the stone remains impacted and the infection subsides a mucocele of the gall-bladder results. More frequently, however, as the infection dies down the resorptive function of the bladder comes into play, tension decreases, the single stone disimpacts and falls back, and bile enters anew. Now is the time for the genesis of multiple stone formation. The bile entering the gall-bladder, the motility of which is crippled and impaired by recent inflammatory changes, mixes with the muco-purulent content. The latter, with its precipitated proteins, leucocytes, desquamated epithelium and micro-organisms, furnishes just the medium for a precipitation of cholesterin-bilirubin-calcium in multiple, granular, semi-crystalline masses. Many of these crystallise out on the surface of the cholesterin stone on which a new cortex is deposited, thus forming what is termed the "combination stone." Many of the little masses of cholesterin-pigment-calcium, however, act as the nuclei for new stones, later seen as the typical facetted stones of lamellated structure.

We thus see how the primary single cholesterin stone may lead to obstruction, inflammation, and secondary septic stone formation, and may itself become enclosed in a shell of the mixed material of which the large family of infective stones is composed. Later obstructive attacks may be followed by further broods of stones, more often, however, by accretion to those already formed. So constant is this sequence that at operations for acute obstructive cholecystitis the surgeon is not satisfied, after opening the gall-bladder, evacuating the pus and, it may be, a hundred faceted stones, until he delivers the ovoid combination stone, usually the largest, from the neck of the gall-bladder or the cystic duct (Fig. 6).

Primary Septic Stones.

Cholecystitis occurs frequently without any obstructing stone being present. From the walls of the inflamed gall-bladder there is poured out an exudate rich in calcium and protein. This mixes with and partly replaces the bile. During the acute stage of the inflammatory process little or no bile can enter the gall-bladder, but as the inflammation subsides and the inflammatory exudate becomes in part absorbed, bile again mixes with the now inspissated exudate which furnishes numerous centres of crystallisation. Rosettes of cholesterin-pigment-calcium form and, later, agglutinate into masses rich in protein. As fresh bile now arrives a slower process of crystallisation occurs, and on the soft, radiate, central nucleus a laminated, more compact, and harder shell is deposited. This shell contains more cholesterin and less calcium than the softer centre. Where the calculi can move about within the gall-bladder they have the typical faceted shape due to accretion at the exposed angles: where, as in small and thick-walled gall-bladders, movement is less easy, they assume a barrel shape with facets at either end where in contact with each other.

BILIARY STASIS.

All writers on biliary diseases are agreed on the importance of stasis in the biliary passages as a factor in the ætiology of both infection and calculus formation. The relative frequency of gall-stones and of cholecystitis in the female sex, especially in multiparous women, suggested the upward pressure of the pregnant uterus and the wearing of corsets as causes of biliary stasis. The not infrequent occurrence of gall-stones in males, in nulliparous females, and the present-day prevalence of this malady, when corsets are no more, indicate that other factors than pressure from without may produce stasis. Of late years much attention has been directed to local factors within the biliary passages themselves which tend towards stasis.

The Stasis Gall-bladder.

Aschoff was the first to describe, under the term "Stauungs Gallenblase," a condition of chronic stasis in the gall-bladder associated with well-defined microscopic changes in its wall occurring independently of stone formation or infection, although liable to be complicated by one or both of these conditions. Berg, in a series of very thorough investigations, differentiated two main types of stasis gall-bladder. In the first the main feature is the increased secretion of mucus by a gall-bladder with well-developed muscular wall and, in this, there develop secondary obstructive phenomena from kinking at the neck. Such a gall-bladder has always a pale mucoid content and is liable to be the seat of cholesterin stone formation. Berg terms this "muco-stasis." The second type, that of "cholestasis," is met with in biliary passages of lower muscular tone with a weaker sphincter. The gall-bladder is dilated, has unimpaired resorptive capacity, and contains dark concentrated bile. In it pigment calcium stones are liable to form.

Schmieden and Rohde have recorded a series of cases, presenting symptoms resembling biliary colic, in which at operation no calculi and no evidence of infection were apparent, but in which obstruction to the outflow was present from kinking at the neck of the gall-bladder, due, in their opinion, to congenital malformation. In all these cases removal of the

gall-bladder gave complete relief from pain. Schmieden recognises three pathological stages in the stasis gall-bladder. In Stage I. the wall shows venous congestion, lymphoid hyperplasia, and slight muscular hypertrophy; in Stage II. the muscular hypertrophy is more pronounced and connective tissue increase is found; in Stage III. atrophic changes with fibrous tissue replacement of the muscle predominate. All observers agree that in many of these cases there is a coincident enlargement and distension of the common bile-duct.

Hypertonic Type of Stasis Gall-Bladder.

Without controverting the views of Berg and Schmieden on the ætiology of the stasis gall-bladder, there is much to be said in favour of the view of Westphal that in these cases the primary and dominant factor is a spasm of the sphincter of Oddi and of the ring of musculature at the junction of neck and cystic duct, leading to secondary dilatation and hypertrophy of the gall-bladder wall—i.e., hypervagotonus determines the condition. We have here a very interesting light thrown on the stasis factor in the biliary tract so universally recognised to be the basal element for biliary lithiasis and infection.

The fact that, in a proportion of the cases in which a "stasis gall-bladder" was found at operation, a single cholesterin stone was present, whilst in others it was not, is a valid argument in favour of the obstructive element, be it kinking or spasm, being the primary factor, and stone formation the secondary result. Not only may stone result from this form of stasis, infection is liable to follow and may occur prior to or independent of any stone formation. The incidence of infection in the stasis gall-bladder will tend to increase the spastic symptoms just as dysentery may cause spastic and painful contractions of the colon. The vicious circle of spasm and infection explains many pathological findings in the gall-bladder as it does many a clinical history.

Biliary Trouble in Pregnancy.

The onset of biliary trouble in relation to pregnancy is proverbial, the association of biliary attacks with menstrual periods less well known but still undoubted. Increase of the blood cholesterin in pregnancy is an oft-repeated observation and now an accepted fact. A corresponding increase in the bile cholesterin is not regularly present during pregnancy. Hypercholesterinæmia and bile stasis from the gross mechanical pressure of the rising uterus together with a tendency to *B. coli* infection traceable to constipation are recognised reasons for the origin of biliary trouble in the later months of pregnancy. Westphal has shown, however, that in pregnant women, after injection of pilocarpine, duodenal intubation proves that there is that initial spasm of the sphincter of Oddi indicative of a hypervagotonus. To this latter condition may be attributed the biliary stasis as also the morning sickness and salivation so frequently seen during the early months of pregnancy. In 9 out of 11 pregnant women Westphal found a hypersensitiveness of the sphincter of Oddi with consequent biliary stasis during the early months of pregnancy when the upward pressure of the uterus could not be considered as an active factor.

The experiments of Storm van Leeuwen and Van der Broeke on the cat's intestine showed that the addition of cholesterin increased the action of pilocarpine, and in the human subject Kaufman and Billigheimer found that in cases of arterio-sclerosis, where increase of cholesterin in the blood was determined, there was an extreme hypersensitiveness to pilocarpine. The cholesterinæmia of pregnancy, therefore, may be potent for gall-stone formation, more from its effect in producing vagotonia and bile stasis than from its supposed influence on the cholesterin content of the bile. Recognising, as we now do, the existence of pathological conditions and clinical entities in the heart, œsophagus, stomach, and intestine, due to dysfunction of the nerve-controlling mechanism, it would be strange did some such disorders not occur in the highly specialised biliary apparatus. We have now sufficient proof to warrant us in believing that hyperkinetic neurosis of the bile passages may cause functional disorders leading not only to pain from muscular spasm, but later to definite biliary stasis with stone formation and inflammatory disease. Achalasia of the bile passages has not, so far as I know, been described. That it does occur seems more than likely, and incoördinate action, with a failure of the sphincter to relax, may account for the rare condition of cystic dilatation of the common bile-duct and bring this striking anomaly into line with such conditions as Hirchsprung's disease of the colon, cardiaspasm, congenital pyloric stenosis, and some forms of hydronephrosis.

Hypotonic Type of Stasis Gall-bladder.

It is in keeping with our knowledge of other hollow viscera that we should find that a *hypotonic* condition of the bile passages may bring about a condition of bile stasis which may lead to infection and stone formation. Berg has described two types of gall-bladder (his Types II. and III.), in which the striking features are thin lax walls, funnel-shaped cystic duct, with, later on, some degree of kinking over the cystic artery. Such gall-bladders resemble closely those seen in animals after paralysis of the vagus by atropine or stimulation of the sympathetic. Such a hypotonic condition of the biliary passages tends to stagnation in the gall-bladder, to increased resorption of water, and thus to aseptic or infective stone formation. This type is met with in asthenic ptosis and represents but a part of a general weakness and lack of tone. In these cases this stasis may be aggravated by anatomical causes tending to bile stasis. In the acquired ptosis of old age, in flabby stout people, and in the subjects of arterio-sclerosis, there is the additional element of increased cholesterin content in the blood which has been demonstrated in such subjects.

All surgeons are familiar with the type of case in which the history and symptomatology are strongly suggestive of gall-bladder trouble where operation reveals a large, flabby, dilated gall-bladder with marked pouching of the infundibulum, but with no calculi and little or no evidence of past or present inflammatory change. In such cases the surgeon usually confesses that the diagnosis has been wrong and contents himself with removing a more or less innocent-looking appendix. The symptoms, however, persist after operation. I have met with cases where two or more such negative abdominal explorations for biliary symptoms have been carried out, in which the patient has been finally relieved by the removal of the gall-bladder. We meet with so many instances of gross lesions, such as stones and frank inflammatory thickening of the gall-bladder wall, that when these are lacking we tend to overlook the subtler changes which may have an equal significance in producing pain and disability for the patient.

The Relation of Biliary Affections to Pancreatic Disease.

The frequent association of a certain degree of pancreatitis with gall-bladder disease is proverbial. As a rule, it is of the nature of a localised sclerosis in the head of the pancreas, sometimes, however, a more widespread change in the pancreas is found. In cases of acute and subacute pancreatitis evidence of disease, usually in the form of gall-stones, in the biliary passages is found. It is customary to attribute the pancreatitis to infection spreading from the gall-bladder or common duct, either by way of the latter or by a retrograde lymphangitis. Archibald suggested that infection was of secondary importance and that regurgitation of bile into the pancreatic duct due to spasm of the sphincter of Oddi was of primary importance. Several facts support the validity of his views. Firstly, in cases of florid acute cholecystitis it is rare to find an acute pancreatitis. Secondly, my experience has been that in fulminating cases of acute pancreatitis, although the gall-bladder is often dilated

and contains stones, it shows no evidence of recent inflammation and the bile within it may be sterile on culture. Thirdly, a bile-stained peritoneal exudate is frequently found in these acute cases.

It seems possible that in this condition a spasm of the distal papillary part of the sphincter of Oddi with relaxation of the portio duodenalis permits, on the one hand, of bile entering the pancreatic duct and so causing the primary pancreatic necrosis; and, on the other hand, of pancreatic secretion entering the common bile-duct and thus allowing bile-pigment to diffuse through the wall of the duct, a consequence which experiment has proved to be possible. Mann and Giordano have demonstrated the presence of sphincteric fibres round the terminal portion of the common duct, the contraction of which might throw the biliary and pancreatic channels into one. It is thus that we find acute pancreatitis supervening in elderly flabby subjects with hypotonic biliary passages, often with gall-stones, but very rarely with active inflammation in the biliary tract.

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OBSERVATIONS ON TRYPARSAMIDE THERAPY IN NEURO-SYPHILIS.

(Preliminary Report to the Medical Research Council.)

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IN January, 1924, through the courtesy and generosity of the Medical Research Council, a preliminary study was undertaken to determine the value of tryparsamide in the treatment of neuro-syphilis as well as its toxicity and untoward reactions, if any.

The material on which this study is based consists of 18 cases of neuro-syphilis, one case of encephalitic psychosis, and a case of Huntington's chorea. At the outset ten cases only were available for treatment, all of whom were general paralytics, but additions to the series have been gradually made with the result that a total of 15 cases of paresis (including one case of juvenile general paralysis), three of meningo-vascular neuro-syphilis, and two non-syphilitic cases, have been under treatment and observation during the past 12 months. The amount of tryparsamide administered to each patient has varied with the time of onset of treatment, the attitude of the patient during the course, and the development of untoward symptoms. I particularly stress the second factor, as my lot has been to contend with great opposition in the treatment of most of my late cases of paresis, so that a fair trial of the drug in that class of patient could not be given.

Valuable experience has been gained in this hospital during the past two and a half years in the malarial treatment of general paralysis, but although we have met with very encouraging clinical results in a good number of cases, the serological results have been less pronounced. It was therefore decided to try the effect of tryparsamide in a series of seven general paralytics who had already received a course of malarial treatment, and to observe whether the addition of the drug brought about a more rapid cure clinically and at the same time serologically.

The cases studied may be classified in four main groups:—

CLASS A.—Tryparsamide only. Eight cases of general paralysis who had received no previous treatment: early cases, 2; late cases, 5; juvenile case, 1.

CLASS B.—Malaria and tryparsamide. Seven cases of general paralysis who had received one course of malaria treatment: early cases, 2; late cases, 5.

CLASS C.—Tryparsamide only. Three cases of meningo-vascular neuro-syphilis: early cases, 1; late cases, 2.

CLASS D.—Tryparsamide only. Two miscellaneous cases: post-encephalitic psychosis, 1 case; Huntington's chorea, 1 case.

In Classes A, B, and C mercury in the form of mercury salicylate has been also employed, and 17 cases of neuro-syphilis received this combined form of drug therapy.

Types of Cases.

The term "early case" has been applied in this series to those general paralytics with a history of not more than six months' mental disturbance prior to admission. "Late" has been reserved for more advanced cases and includes the "fat, fitty" variety as well as the infirm and bedridden. As a pronounced clinical improvement was not anticipated in the latter group the serological results became of prime importance, and formed a criterion of the therapeutic value of the drugs employed.

Technique of Treatment.

Tryparsamide, wherever possible, was administered intravenously in weekly doses of 3 g., over a period of eight or ten weeks. The drug was given in a 30 per cent. solution, obtained by dissolving 3 g. of the salt in 10 c.cm. sterile freshly-distilled water. The subcutaneous route was used in three patients (Cases 5, 6, and 7) because in them any attempt at intravenous medication was likely to be fraught with considerable danger.

Mercury in the form of mercury salicylate was administered intramuscularly into the buttock in 1 gr. doses. The mercury was given at the same time as the tryparsamide, and a total of eight or ten injections of tryparsamide and mercury comprised a single course. It was then the practice to institute a rest interval or drug-free period of six to ten weeks, after which a second similar course was repeated. A further period of rest was again ordered, and a third course, if necessary, given.

The grand total of injections, including those introduced by the subcutaneous method, numbered 242 of tryparsamide and 199 of mercuric salicylate. During the period at my disposal two cases only received three full courses (25 to 28 injections) of treatment; three patients have received two courses (18 to 20 injections); six cases one course (8 to 12 injections), and four an incomplete course of five to seven doses. In the meningo-vascular group one patient received two courses of treatment, and two patients one complete course of combined therapy.

Examination of Patient.

Besides the usual clinical, mental, and neurological examinations a full investigation of the chemistry and serology of the blood and cerebro-spinal fluid was made in each patient. Specimens were taken where possible before, during, and following the courses of treatment in order to find out whether serological improvement was taking place and if parallel improvement in the clinical and laboratory findings could be recorded.

The cerebro-spinal fluid examinations comprised the following: colloidal gold reaction of Lange; colloidal gamboge test of Riddel and Stewart; estimation of globulin content by the tests of Ross-Jones and Pandy; estimation of the cell content (Fuchs-Rosenthal); sugar concentration; and Wassermann reaction (W.R.).

The blood examinations performed were the estimation of the sugar content and the Wassermann reaction.

The estimations of the sugar content of the blood and cerebro-spinal fluid were carried out according to the method of Folin and Wu. Slight modifications of the technique were followed in the spinal fluid estimations.

The Van den Bergh, Fouchet, and Lowenhart lipase tests of the blood serum were performed where impaired function of the liver was suspected as a result of treatment with tryparsamide. The Fouchet test was carried out in the bloods of all the cases on completion of the course of

treatment, in order to detect where present the condition known as hyperbilirubinæmia or latent jaundice.

Weight charts were kept of each patient throughout the periods of treatment and observation.

Clinical Findings.

The clinical results based on observations made on the whole series of cases treated during the past year have been satisfactory, and to facilitate their readings summaries have been given in tabular form and according to their classification.

CLASS A.—*Cases of Paresis treated by Tryparsamide only.*

Classification.	Recovered.	Improved.	Unchanged.	Died.
Paresis { early (2 cases) .	2	—	—	—
Paresis { late (5 ,,) .	—	—	4	1
Paresis { juvenile (1 case) . .	—	1	—	—
Total . . . . 8 cases	2	1	4	1

The term "recovery" is used exclusively to denote cases that have reached a state of complete remission; where the patient has regained his full working power and shown complete freedom from demonstrable psychical defects; "improvement" is used where the progress of the disease has become stationary, or where the patient has developed a partial remission with a residual psychical defect. The early cases began to show signs of recovery a few weeks following the completion of the first course of treatment. Excellent progress was maintained in both cases during the second course, and in the interval that followed the patients were discharged recovered in a state of complete remission.

CASE 1.—H. F., male, aged 44; admitted Jan. 19th, 1924, discharged August 30th, 1924.

History.—In the early part of December, 1923, he developed numerous grandiose ideas, habits of extravagance, euphoria, paramnesia, and impairment of reasoning and judgment.

Central Nervous System.—The pupils were regular but unequal, and the reactions were all sluggish; pupillary oscillations were absent, and the oculo-spinal sympathetic reflexes were sluggish. Speech was rapid, but slightly though definitely impaired by tremors and hesitancy over certain test words. The tongue showed no tremor; expression of the face was relaxed and the muscles atonic. There was a general increase in the deep reflexes of all the limbs; the superficial reflexes were brisk and equal. Handwriting showed well-marked tremors and elision of syllables in the spelling of simple words.

Physical Examination.—Physique fair, the heart, lungs, and abdominal viscera apparently normal. Weight 8 st. 8 lb.

Serology.—C.S.F.: colloidal gold 5555321000; colloidal gamboge 222210; globulin one plus; cells 53·3 per c.mm.; sugar content 0·118 per cent.; W.R. positive.

Blood: W.R. positive in 1 in 15 dilution; sugar content 0·12 per cent.

Treatment with tryparsamide and mercury was commenced on Jan. 22nd, 1924, and eight weekly injections were administered to March 11th, 1924, when a rest interval was ordered. His mental state did not show the slightest improvement. Following the sixth injection the blood and spinal fluid were as follows:—C.S.F.: colloidal gold 5542100000; colloidal gamboge 221000; globulin one plus; cells 7 per c.mm.; W.R. negative. Blood: W.R. doubtful in 1 in 2 dilution. His body-weight began to improve, and with the last dose there was a gain of 5 lb. A rest interval of eight weeks was given and towards the end of that period his mental state began to show improvement. He talked less, ridiculed his former statements as delusions, and made sensible inquiries concerning his wife and family, his illness, and prospects of recovery. He had gained 12 lb. in weight at the end of the drug-free interval, and the serological readings were:—C.S.F.: colloidal gold $\frac{55}{5444321000}$; colloidal gamboge 221000; globulin one plus; cells 11·6 per c.mm.; sugar 0·08 per cent.; W.R. negative. Blood: W.R. weakly positive 1 in 4; sugar 0·08 per cent.

A second course of ten weekly injections of tryparsamide and mercury was instituted on May 13th, 1924, and during this period the improvement continued and he became a useful member of the community. He enjoyed the full privileges of parole within the grounds, and often expressed his appreciation for the keen interest that was taken in his case. After the last dose of his second course four weeks were allowed to elapse before another serological examination was made. C.S.F.: colloidal gold 0011210000; colloidal gamboge 100000; globulin faint trace; cells 3·6 per c.mm.; sugar 0·059 per cent.; W.R. negative. Blood: W.R. negative; sugar 0·12 per cent.

No further treatment was given, and patient was discharged recovered at the end of August, 1924. He has since returned to his former employment, and a letter from him, dated May, 1925, stated that he was well.

This case is of particular interest in that the clinical and serological findings ran in parallel paths towards complete recovery. The cerebro-spinal fluid readings, apart from the "sub-luetic" curve in the gold-sol, are normal. The physical signs showed no improvement except that his handwriting, speech, and muscular coördination had returned to normal. The weight at the end of treatment showed an increase of 15 lb.

The second case of early paresis recovered with the same amount of treatment. The serological recovery, however, was less pronounced.

CASE 2.—J. D., male, aged 33; admitted Dec. 31st, 1923, discharged August 30th, 1924.

History.—The patient was described by his wife as having been strange in his habits for four months and as having occasionally suffered from "twitchings" of the limbs.

On admission he seemed unaffected by his transfer to hospital, and was found to be disorientated for time and place. He was paramnesic and would steal other people's belongings and hoard them for no apparent reason.

Central Nervous System.—The pupils were unequal and irregular, the reactions to light sluggish; to accommodation and convergence sluggish, but with fair excursion; pupillary oscillations and oculo-spinal reflexes were sluggish. His articulation was drawling, tremulous, and hesitating, particularly over certain test words. There was a general increase in the tendon reflexes of the limbs, and the superficial responses were brisk and equal. Coarse tremors were manifested in the outstretched hands, and handwriting was shaky and "heavy."

Physical Examination.—Physique good, heart and lungs apparently normal.

Serology.—C.S.F.: colloidal gold 5555321000; colloidal gamboge 222220; globulin 2 plus; cells 89·3 per c.mm.; sugar 0·08 per cent.; W.R. positive. Blood: W.R. strongly positive in 1 in 45; sugar 0·086 per cent.

Treatment with tryparsamide and mercury was commenced on Jan. 22nd, 1924, and a single course of eight weekly doses was given. His habits did not improve during treatment. Following the sixth inoculation his serological readings were:—C.S.F.: colloidal gold 5554321000; colloidal gamboge 222100; globulin one plus; cells 8 per c.mm.; W.R. positive. Blood: W.R. positive in 1 in 15 dilution.

A rest interval of eight weeks was given, during which he showed gradual improvement except for two serious lapses of conduct. Prior to his second course his mental state and conduct were sufficiently improved to be regarded as normal, and a further examination of his blood and spinal fluid was made:—C.S.F.: colloidal gold 5554321000; colloidal gamboge 222100; globulin one plus; cells 4·3 per c.mm.; sugar 0·083 per cent.; W.R. positive. Blood: W.R. positive 1 in 5; sugar 0·11 per cent.

The weight during the first course increased by 13½ b., but dropped by 4½ lb. in the succeeding rest interval.

A second course of ten injections was given and concluded by July 15th, 1924, when he lost a further 5 lb. No further treatment was given as patient had made a complete mental recovery. His mind was clear, his memory and orientation good, and his insight extraordinarily good. Speech and writing defects had disappeared, but the other physical signs were unaffected. The serology at this stage read:—C.S.F.: colloidal gold $\frac{555}{4444321000}$; colloidal gamboge 221000; globulin one plus; cells 3·6 per c.mm.; sugar 0·069 per cent.; W.R. positive. Blood: W.R. weakly positive 1 in 8; sugar 0·10 per cent.

Patient was discharged recovered on August 30th, 1924, and returned to his former employment. A letter later received stated that he was quite well and working regularly.

The treatment of the late cases of general paralysis has been unsatisfactory and disappointing. In one patient only (Case 3) was it possible to administer three full courses of treatment, as in the remainder the resistance of the patient prevented a fair trial of the drug. Consequently the clinical and serological results of this group of cases are of little interest.

CASE 5.—W. A., male, aged 35. Was admitted to hospital in January, 1923, in a state of acute mental confusion. The

physical signs were typical of general paralysis. and the serological findings were :—C.S.F. : colloidal gold 5555421000 ; colloidal gamboge 122210 ; globulin one plus ; cells 160·3 per c.mm. W.R. positive. The blood W.R. was positive in 1 in 15 dilution. Treatment was instituted in January, 1924, and 21 g. of tryparsamide and 3 gr. of mercury salicylate were given over seven sittings. Further treatment has been impossible owing to the maniacal behaviour of the patient, but an examination of his serology indicates considerable improvement. The W.R. of the blood and spinal fluid were negative. the colloidal gold and other reactions read : colloidal gold 1122110000 ; colloidal gamboge 221000 ; globulin, trace ; and cells 16 per c.mm.

A case of juvenile general paralysis (Case 4) appears in the list of patients subjected to tryparsamide and mercury treatment, but owing to the patient's aggressive attitude only a single course has been permitted.

CASE 4.—J. F. M., male, aged 17 ; admitted June 26th, 1924.

History.—Patient was found wandering about a seaport city and could give no information regarding himself or his parents, and inquiries have proved fruitless.

On admission patient was mentally unstable, laughing and crying without reason. He suffered from aphasia, and his replies to simple questions consisted of a repetition of such words as " Joe," " Yes," or " No." When given a banana he did not know what to do with it, but lit and smoked a cigarette. His responses to simple commands, such as " Shake hands " or " Put out your tongue," were delayed and imperfect. He probably suffered from agraphia, as he was unable to write a name to dictation.

Physical Condition. — Patient's appearance and stature suggest a much younger boy. Stigmata of congenital syphilis were found.

Central Nervous System.—The pupils were unequal and dilated ; the left was irregular ; reactions to light were sluggish, but those to convergence and accommodation were impossible to ascertain ; oscillations of the pupil and the sympathetic reflexes were absent. There was a well-marked fibrillary tremor of the labial muscles whenever the patient attempted to speak. Gesticulations were frequent. Knee and tendo-Achilles jerks were absent on both sides. The plantar responses were flexor. There was no impairment of sphincteric control. Sensation was apparently normal ; Abadie's test for deep sensibility negative. Gait was steady, although there appeared to be at times a slight hesitation in the movement of the right lower limb.

Serology.—C.S.F. : colloidal gold 5555543210 ; colloidal gamboge 122220 ; globulin one plus ; cells 45 per c.mm. ; sugar 0·045 per cent. ; W.R. positive. Blood : W.R. strongly positive 1 in 45 ; sugar 0·088 per cent.

Treatment with tryparsamide and mercury was commenced on July 1st, 1924. The usual dosage was altered in this youthful case and the first injections consisted of 2·5 g. of tryparsamide and 1 gr. of mercuric salicylate. The remaining inoculations varied from 2·1 to 2·5 g. of tryparsamide and 0·5 to 1·0 gr. of mercury with two 14-day intervals between the second and third, and the fourth and fifth injections respectively. The total amount administered during the course of eight injections consisted of 19·2 g. tryparsamide and 5·5 gr. of mercuric salicylate. Apart from slight attacks of vomiting after the early injections, the course was well tolerated. No further treatment as yet has been possible, although many attempts have been made to overcome his resistance.

During the period of treatment his physical state improved, and there was a gain in weight of 6 lb. His mental state, however, remained unchanged. He remained unduly irritable, and when dissatisfied smashed windows or plates.

Ten to 12 weeks after the last injection an improvement in his mental state was noted ; he became better behaved and more amenable to reason, while outbursts of passion and turbulence disappeared. His habits improved. Serious setbacks in the nature of epileptiform seizures occurred during the evenings of Oct. 29th and Dec. 23rd, 1924, but recovery from both was prompt and rapid. His body-weight now registers 8 st. 10 lb. or a total gain of 35 lb. C.S.F. : colloidal gold 1122110000 ; colloidal gamboge 100000 ; globulin trace ; cells 8 per c mm. ; sugar 0·062 per cent. : W.R. positive. Blood : W.R. strongly positive 1 in 45 ; sugar 0·08 per cent.

The clinical results obtained in the combined fever and drug treatment of cases grouped in Class B showed no marked superiority over those already discussed, and a reference to the summary given below will illustrate that practically the same number of early and late cases have been utilised for comparison.

Seven patients suffering from general paralysis were subjected to a course of treatment with malarial fever. The benign tertian strain was exclusively used and a number of rigors, varying from six to ten, was induced in each case and arrested by quinine. A period of rest of five to ten days was allowed to elapse before treatment with tryparsamide and mercury was commenced.

CLASS B.—*Cases of Paresis Treated by Malaria and Tryparsamide.*

Classification.	Recovered.	Improved.	Unchanged.	Died.
Paresis { early (2 cases) ..	2	—	—	—
Paresis { late (5 „) ..	—	1	3	1
Total .. 7 „ ..	2	1	3	1

These arsenical and mercurial preparations did not materially influence the course, clinical or serological, of the cases treated by malaria inoculation. In our experience with this form of fever treatment a fairly accurate prognosis can frequently be offered soon after the cessation of treatment. In Cases 10, 12, and 14, all of whom have been discharged to their homes, a hopeful prognosis was anticipated before treatment with tryparsamide was commenced. It cannot be said at this stage that their rates of recovery were accelerated, or that the clinical results have been rendered more stable, as complete clinical recoveries have been obtained with malaria treatment only, and patients have remained at home, and at work, for periods varying from three to 18 months. Again, a comparison between the post-malarial serology of Case 9 and the laboratory findings at the completion of the malarial and drug treatment of Case 10 will confirm the opinion already expressed above that the addition of tryparsamide to the malarial treatment of general paralysis has not been attended by any better or worse results than those obtained with the malarial treatment alone.

One death took place in a patient treated by this method, not as a result of malaria or tryparsamide, but indicating the inability of the fever or drug to arrest the progress of the disease.

CASE 11.—F. M., male, aged 47, was admitted in November, 1923, with late general paralysis. There was extreme dementia with mental confusion and characteristic neurological and speech anomalies. The spinal fluid was quite typical. He received a course of malarial treatment (ten rigors) which ended on Dec. 16th, 1923, but as no improvement resulted further treatment by tryparsamide and mercury was started. He received six injections of both drugs, but deteriorated rapidly, became feeble and bedridden, developed amblyopia and conjunctivitis, and died a typical general paralytic death.

Treatment has been discontinued in one case owing to the development of seizures half way through the course.

CASE 15.—C. D., male, aged 47, was admitted in March, 1924, because of gradual failure of memory and inability to carry on his business as a master tailor for the previous two years. On admission he was euphoric and grandiose. The neurological picture was typical of general paralysis with well-marked speech defects. Laboratory findings were :—C.S.F. : gold-sol 5554432100 ; colloidal gamboge 222210 ; globulin one plus ; cells 13 per c.mm. ; sugar 0·07 per cent. ; W.R. positive. Blood : W.R. positive 1 in 10 ; sugar 0·09 per cent. An inoculation with malarial blood was performed in April, 1924. At the end of the third rigor patient became very anæmic and exhausted, and albumin in large quantities appeared in the urine. Treatment was immediately cut short with quinine, and an interval of rest ordered. A month later patient had sufficiently improved physically to undergo a further fever course, and a second inoculation was administered, which was again successful, and at the end of the ninth rigor treatment was again arrested by the oral exhibition of quinine. A lumbar puncture performed a few days after the finish of the fever course gave the following results :—C.S.F. : gold-sol 5555432100 ; colloidal gamboge 22210 ; globulin one plus ; cells 10 per c.mm. ; sugar 0·077 per cent. ; W.R. doubtful. Blood : W.R. weakly positive 1 in 8 ; sugar 0·118 per cent. Tryparsamide and mercury treatment was commenced on July 8th, 1924, and repeated at weekly intervals without apparent ill-effects until five days following the fifth injection, when patient had fever and signs of meningeal

irritation. A status epilepticus of 77 seizures supervened, and his life was despaired of. (For further notes on this case vide the section on "Reactions following the use of Tryparsamide.") No further treatment was given and patient gradually improved, but an attack of mild arsenical jaundice four weeks later again embarrassed him. At the time of writing, however, he has sufficiently improved to be allowed up all day and to enjoy the privileges given to well-behaved patients. His mental state, however, shows no improvement; he is euphoric and deluded.

Clinical and serological improvements do not necessarily run parallel with each other, as two patients (Cases 9 and 13) with general paralysis, in whom the spinal fluid and blood readings became completely negative after treatment, exhibited no mental change.

A summary of the combined results obtained in the treatment of cases of Classes A and B reads:

CLASSES A AND B.

Classification.	Recovered.	Improved.	Unchanged.	Died.
Paresis { early (4 cases).	4	—	—	—
Paresis { late (10 ,,).	—	1	7	2
Paresis { juvenile (1 case).	—	1	—	—
Total .. .. 15 cases	4	2	7	2

Of a total of 15 cases of general paralysis treated during the past year by tryparsamide, and malaria and tryparsamide respectively, five, or 33·3 per cent., have recovered, and have been discharged from the institution. All four early cases have made a complete clinical recovery, while one patient with late paresis has returned home to his former employment with a slight residual memory defect. It will be seen that the late cases of the group have done badly, as two died and seven were unimproved.

Meningo-vascular Neuro-syphilis.

The results obtained in the treatment of this variety of brain syphilis are limited to the observations made on three cases over a period varying from three to eight months.

Improvement has occurred in two patients, one an early case in which treatment is being continued, and one a late case with chronic hemiplegia. In the latter, treatment was stopped at the ninth injection as symptoms suggesting the development of amblyopia occurred. In the third case, after a preliminary and apparently brilliant recovery, treatment had to be stopped, as patient became much worse and gradually deteriorated.

CASE 16.—A. C., male, aged 36, labourer; admitted March 22nd, 1923.

History.—Patient contracted syphilis in 1907 and received a course of mercury inunctions and oral potassium iodide over a period of 12 months. In 1912 he contracted malaria. He served during the war in France till the end of 1917. He was rendered unconscious by a shell explosion in August, 1916, and did not make a complete recovery. In June, 1917, following a shrapnel wound in the back, patient suffered from severe pains in the loins which prevented him from walking erect. He was boarded in 1922, when he complained of rheumatism in the loin muscles and an inability to walk any distance. For a few months prior to admission patient had several transient attacks of an apoplectiform nature, during which speech and movements of the right side of the body were lost. These seizures lasted, on an average, about an hour, and after them he became emotional and depressed. The present mental illness commenced during March, 1923, when he became absent-minded and talked about going on the stage to earn his fortune as a vocalist. On admission patient was excited, hilarious, and deluded. Orientation for time and place appeared normal, but there was a slight degree of anterograde amnesia.

Central Nervous System.—The pupils were slightly unequal and irregular; reactions to light and the responses to accommodation and convergence were all brisk and equal. The oculo-spinal reflexes were present and the pupils oscillated at rest. Speech was indistinct, tremulous, and slurred, articulation being accompanied by tremors of the labial and lingual muscles. The right knee-jerk was diminished, but the left was absent. Tendo-Achilles jerks were absent on both sides. The superficial reflexes were present and equal. Gait was normal, and the tests for the loss of deep sensibility were negative.

Serology.—C.S.F.: colloidal gold 0023332000; colloidal gamboge 222110; globulin one plus; cells 60 per c.mm.; W.R. positive. Blood: W.R. positive 1 in 3 dilution.

The combination of clinical signs suggesting general paralysis and a "luetic" curve of the gold-sol test of the cerebro-spinal fluid induced us to label the case as one of syphilitic meningo-encephalitis.

Treatment by "914" and silver salvarsan was commenced in October and continued till May 13th, 1924, when a total dosage of 0·75 g. of "914," 1·35 g. of silver salvarsan, and 8 gr. of mercuric salicylate had been given. During treatment patient said he felt much better, although the inoculations were attended or immediately followed by rigors, headaches, or attacks of vomiting. He improved mentally, became quiet, amenable to reason, and more affectionate towards his wife. On three occasions during the course he suffered from apoplectiform seizures, ushered in by intense vertigo and headaches, and followed by great mental confusion, aphasia, and hemiplegia. The attacks followed at irregular intervals and were accompanied by a rise in temperature (101° F.) which lasted several days. Examinations of the cerebro-spinal fluid during the attack showed no alteration in the cell count, although following the second seizure the "luetic" of the gold-sol test was converted into a typical "paretic" curve (5553210000). As a remittent fever of 100° F. continued with loss in weight and appetite, treatment by tryparsamide was substituted, and the first injections were duly given on May 20th, 1924. A course of eight inoculations was administered, and an immediate and pronounced improvement was observed. He so quickly recovered his strength and improved in general health and body-weight that he was able to walk about steadily and do useful work in the wards. The apoplectiform seizures ceased, while his speech improved. The inoculation reactions that frequently followed the salvarsan injections did not reappear with the tryparsamide treatment. Excellent progress was maintained during the rest interval. He took a great interest in himself and appreciated the special treatment that was being given to him. The improvement, however, was temporary, as from the commencement of the second course on Sept. 16th, 1924, patient gradually became worse, so that by the end of the fifth dose he was neither able to talk nor to move any of his limbs. An aphasic attack was less pronounced, and not accompanied by pyrexia or intense headaches. During the few days that followed patient became depressed and agitated. He gradually got worse, and one day made an attempt on his life. Washing and feeding became increasingly difficult, and as his sleep was disturbed, hypnotics were freely administered. A neuro-relapse was suspected, and in the hope of cutting short the complications two-weekly doses, each consisting of 4·5 g. of tryparsamide and 1 gr. of mercuric salicylate, were given. An epileptiform seizure occurred four days after the first of these inoculations, and as the mental and physical condition became steadily worse treatment was stopped. At the time of writing his physical condition shows a slight change for the better, but his mental state shows no signs of recovery. The present serological readings are:—C.S.F.: gold-sol 0011100000; colloidal gamboge 100000; cells 2 per c.mm; globulin trace; W.R. positive. The blood W.R. is doubtful.

CLASS D.—*Miscellaneous Cases.*

An opportunity for testing the efficacy of tryparsamide in the treatment of non-syphilitic nervous states occurred on the admission of a case of post-encephalitic confusion and a case of Huntington's chorea. A short course of five weekly doses were given to the latter, but as no improvement took place beyond an increase of 17 lb. in body-weight, treatment was discontinued. The treatment of the former is of interest because of the effect of the drug on the serological findings.

CASE 19.—B. E., male, aged 35; fisherman; admitted June 2nd, 1924.

History.—In March, 1924, patient had encephalitis lethargica with alternating periods of delirium and somnolence. Recovery was incomplete, and a complete change in character took place. He became childish and simple and paramnesia was marked. Certification became necessary when he tried to drown himself and later to strangle his wife. He had been a heavy spirit drinker for many years.

On admission he was suffering from extreme confusion with hallucinations. His bodily health and condition were good.

Central Nervous System.—The pupils were irregular and markedly unequal; reactions to light and to convergence and accommodation were sluggish, but showed a fair excursion. Pupillary oscillations were absent, and the sympathetic reflexes were present, but sluggish. Attacks of transient diplopia were frequent, but no weakness of any extrinsic muscles of the eye as revealed by ordinary examina-

tion. The deep reflexes of the lower limbs were normal, but those of the arms were slightly increased. The epigastric reflexes were not elicited, but the remainder were normal. Fine intention tremors were observed in the protruded tongue and the outstretched hands. The facial expression was atonic, but the folds remained well marked. Speech was difficult but effective, without evident tremors of the facial muscles. The general sensations, sphincters, and gait appeared normal. Choreiform movements of the limbs were absent and coördination generally was good.

Serology.—C.S.F.: colloidal gold 0023321000; colloidal gamboge 121110; globulin one plus; cells 256·3 small and large lymphocytes per c.mm.; sugar 0·057 per cent.; W.R. negative. Blood: W.R. was weakly positive in 1 in 8 dilution.

The spinal fluid W.R. was repeatedly tested and was negative. From June to August patient was apathetic and completely indifferent to his environment. Outbursts of causeless crying were frequent. On two occasions he had for several days what I assume to be a mild recurrence of his encephalitic condition as he became drowsy during the day and required to be awakened at meal hours. These clinical relapses were accompanied by mild fever, never rising above 100° F.; 5 c.cm. of cerebro-spinal fluid were withdrawn on August 11th, 1924, and immediately administered intravenously, but with no good results, so a trial with tryparsamide was suggested. The serological readings immediately prior to the commencement of treatment by tryparsamide were:—C.S.F.: colloidal gold 555432100; colloidal gamboge 222100; globulin one plus; cells 96·6 small and large lymphocytes per c.mm; sugar 0·05 per cent.; W.R. negative.

A course of ten weekly doses of 3 g. of the drug was given, and at the end of the period patient showed a remarkable improvement, especially in his general health and body-weight. (At the time of writing body-weight has shown a gain of 21 lb.) His mental state has improved slightly. He takes more interest in his environment, takes his food more readily, and has adopted cleaner personal habits. A second course of tryparsamide injections has been instituted in the hope of further improvement in his mental state. Serology prior to the commencement of the second course reads:—C.S.F.: colloidal gold 000110000; colloidal gamboge 110000; globulin trace; cells 18·3 per c.mm.; sugar 0·064 per cent.; W.R. negative. The blood W.R. is weakly positive in a 1 in 5 dilution; the sugar content 0·08 per cent.

Serological Findings.

Since malarial therapy had produced serological changes in the cases of general paralysis of Class B prior to the institution of further treatment by tryparsamide, and as Class A consisted of cases of a similar nature, but treated only by the drug, it was possible to contrast the respective serological merits of both methods of treatment, and to form some opinion of the efficacy of tryparsamide as an additional therapeutic agent in the fever-treated cases. Serological improvement of varying degrees was manifested in all the cases of general paralysis treated by tryparsamide.

The effect on the cell count was particularly striking. A marked reduction in the number of lymphocytes was observed in all the cases where a lumbar puncture was performed after the sixth injection, and at the end of treatment this improvement was manifested in 100 per cent. of the series. The final average readings were low, 50 per cent. of the fluids having a cell count ranging from 0 to 5 c.mm., 25 per cent. from 5 to 10 per c.mm., and 25 per cent. from 10 to 20 cells per c.mm. The decrease in the number of cells was general, as no increase in lymphocytes was observed. The globulin content, as estimated by the ring test of Ross-Jones and the reaction of Pandy, was reduced in amount at the end of treatment in 62·5 per cent. of the cases, but remained unchanged in 37·5 per cent. of the series.

The W.R. of the cerebro-spinal fluid has been very refractory to treatment with tryparsamide, no fewer than six out of the eight fluids showing "no change." A negative reaction, however, was obtained in the remaining two, or 25 per cent. of the cases.

The colloidal gold curve showed slight changes in several cases at the end of the first course of treatment. A mid-zone or "luetic" curve was obtained in two instances after six and eight doses respectively. Prolonged treatment with two or more courses of tryparsamide was permitted in three cases, when a variety of changes in the curve was observed. A slight change occurred in one, a "sub-luetic" curve was obtained in the second, while in the third a negative gold solution resulted. The colloidal gamboge reaction exhibited parallel changes to those noted in the gold-sol test at the different stages of treatment. The sugar content of the cerebro-spinal fluid of the whole series of general paralytics varied from 0·045 per cent. to 0·118 per cent. with an average of 0·068 per cent. before treatment. Following treatment the results varied in individual cases from 0·059 per cent. to 0·10 per cent. with an average of 0·071 per cent. Simultaneous blood-sugar estimations were made. The W.R. of the blood tended to be affected at the early stage of treatment. At the close two, or 25 per cent., became negative; three, or 37·5 per cent., were definitely reduced in intensity, and a similar number remained unchanged.

A reference to the cases grouped under Class B will demonstrate that malarial treatment in cases of general paralysis produces changes in the serological readings which more or less correspond to those obtained where tryparsamide alone has been used, except that the latter drug has perhaps a more pronounced effect on the cell count of the cerebro-spinal fluid. The employment of tryparsamide as an adjuvant to the malarial treatment of cases of paresis has not been attended by any brilliant results, although in two cases a more satisfactory serological reading was obtained after the drug was used.

In the meningo-vascular group the periods of observation have been short, but long enough to note that changes tending to the normal have occurred in the constituents of the blood and spinal fluid of all the cases. In the treatment of one patient the superiority of tryparsamide over other arsenicals has been demonstrated.

Reactions following the Administration of Tryparsamide.

The reactions following tryparsamide may be classified as (1) Early effects: (*a*) those occurring during or immediately following the injection; (*b*) those occurring within 24 hours of the injection. (2) Late effects.

(1) *Early Effects.*

(*a*) Those occurring during or immediately following the injection.

1. *Vasomotor Symptoms.*—"Anaphylactoid" or "nitritoid" crises occurred on five successive occasions during the treatment of one case (Case 14). The phenomena, however, did not make their appearance or cause any discomfort to the patient until immediately after the fifth injection, when he complained of sickness. The attack was transient. The symptoms were more marked after the next injection, when he complained of a "lump" in his throat and of faintness. This attack lasted a little longer (from 5 to 8 seconds) and then disappeared. During the seventh inoculation the arsenical salt was administered more slowly, but the moment the needle was withdrawn from the vein the patient complained of sickness and a feeling of intense oppression in the chest, while the face became flushed and his breathing laboured. Before the eighth and ninth inoculations a prophylactic of 1 c.cm. of a 1 in 1000 solution of adrenalin chloride was given intramuscularly, and the only symptom noted was a transient attack of nausea. At the tenth injection no prophylactic was given, and the operation was followed by no abnormal symptoms. Again, following two subsequent injections after an interval of eight weeks, no alarming symptoms made their appearance. Observations on the pulse readings during these crises revealed no changes in rate or volume. The attacks were mild in degree, never lasting more than a few seconds, and recovery was prompt and rapid. It might be interesting to point out that the patient had never been susceptible to any form of vasomotor disturbances or idiosyncrasies prior to treatment, nor did he present the so-called "plethoric disposition," in which these phenomena are said to occur. His heart, however, was enlarged in its transverse axis, and auscultation revealed a regurgitant mitral lesion.

Before treatment he suffered from attacks of palpitation and shortness of breath on exertion.

(*b*) Those occurring within 24 hours of the injection.

1. *Rigor, Rise of Temperature, and Headache* were the commonest sequelæ, and usually appeared within one hour, passing off by the third day. One mild rigor occurred during the night following the first inoculation of Case 10. The rise of temperature often occurred on the same evening as the first injection or on the evening following and only occasionally after the second injection. The average rise of temperature was no more than a degree Fahrenheit, although on three occasions temperatures of over 100° F. were recorded. Slight headaches, frontal or occipital, were common reactions to the first and occasionally to the second injections.

2. *Diarrhœa and Vomiting*, which were usually slight, occurred only in some of the cases which received combined arsenical and mercury treatment. In all except one the disturbances were mild, and passed off without treatment, the diarrhœa being limited to one or two semi-solid dark green offensive motions, and the vomiting to little more than retching. Streaks of bright red blood and mucus were observed in a few of the examined stools following the first injection, and were as often as not found in cases where diarrhœa was absent. In one patient it was not until the twenty-third injection that blood and mucus made their appearances. These symptoms never recurred with continued administration, and therefore no alterations in dosage or times of administration were required. In Case 13, however, the symptoms were more severe and considerably exhausted the patient. In the early morning following the first injection he complained of feeling unwell, and suffered from tenesmus, diarrhœa, and vomiting. The motions were numerous, diffluent, green, and very offensive. No mucus or blood was present. Vomiting of stomach contents tinged with bile came on later and persisted throughout the morning and early afternoon. The appetite was lost and inconstant pains in the abdomen and head accompanied the attack. On the exhibition of alkalis by mouth the attack was quickly brought under control and disappeared before nightfall.

3. *Conjunctivitis.*—Injection of the palpebral conjunctivæ occurred in three of the advanced cases following the second, fifth, and sixth doses respectively. The inflammation was subacute and accompanied by slight muco-purulent discharge. In two cases it appeared after the last dose had been given.

4. *Shedding of the Nails.*—This unusual condition was seen in one patient soon after the first inoculation. Within three to four weeks most of the nails had been affected, and by the end of the course (ten weeks) all had been shed and partially replaced.

5. *Mental Symptoms.*—Intense restlessness with insomnia and delirium occasionally followed the administration of the early doses in a few of the cases of the bedridden type. The attacks varied in duration from 12 hours to a few days.

Treatment.—For the vasomotor disturbances intramuscular injections of 1 c.cm. of 1 in 1000 adrenalin chloride were found to be beneficial.

(2) *Late Effects.*

1. *Pathologic Urinary Constituents.* — Traces of albumen were relatively uncommon. In each instance the urine secreted in the early morning of the day following the injection was collected and examined. A trace of sugar (phenyl-hydrazine test positive) was found on one occasion in Case 13 after the administration of the first dose of arsenic. Examinations made following the later injections were all negative. Bile was present in two cases affected with jaundice.

2. *Malaise.*—A general feeling of malaise occurred late in the second course of one case (Case 10), and was considered a sign of intolerance. It was accompanied by headache, loss of appetite, lassitude, and loss of weight. After a rest interval of ten weeks tryparsamide alone was tried with encouraging results. The patient's appetite and weight steadily improved, and now, at the end of the third course, he is very fit and well.

3. *Jaundice.*—Jaundice as a late symptom occurred in two cases of the series (Cases 13 and 15). Whereas the former received a complete course of ten doses the latter had five inoculations, or half the prescribed course of combined arsenic and mercury treatment. This was due to the development of seizures after the fifth injection. The first symptoms of jaundice came on in both cases during a rest interval, six and eight weeks respectively, after the administrations of the last doses. The onset, clinical signs and symptoms, blood changes, course and duration of the malady were remarkably similar in the two cases, and both patients made a rapid and uninterrupted recovery. There were no prodromal nor premonitory signs as the patients were in good health when the tinging of the conjunctivæ was noted. The clinical signs and symptoms were like those in a mild attack of catarrhal jaundice. The fæces were slate-grey and offensive. The urine contained bile-pigment.

Examinations of the blood showed :—

Blood serum, tinged highly yellow.
Fouchet test, strongly positive.
Gmelin test, strongly positive.
Van den Bergh test, delayed positive in phase 1; immediate positive in phase 2.
Sugar content, 0·09 per cent. and 0·10 per cent. (Cases 15 and 13 respectively).
Lipase estimation, 0·5 and 0·6 respectively.

The results of the lipase test suggested an arsenical affection of the liver cells with impairment of function. Ordinary diet and alkalies were prescribed and recovery was prompt and rapid. No clinical recurrences have been observed up to the time of writing, although in Case 15 the blood serum still gives a slightly positive Fouchet reaction (i.e., ? latent jaundice).

4. *Epileptiform seizures* developed half-way through the first course of Case 15, who became weak and exhausted after nine rigors. Quinine therapy was instituted until malarial parasites had disappeared from the peripheral circulation. He received his first doses of tryparsamide and mercury three days later and the injections were continued at weekly intervals for a month, during which time he improved in health and weight to the extent of 5 lb. A change, however, was noted four days after the administration of the fifth dose, when he became restless and confused. During the following 24 hours he exhibited signs of meningeal irritation with conjugate deviation of head and eyes to the right, rigidity of limbs, and grinding of teeth. The temperature steadily rose and by the evening of the following day had reached 104·2° F. At this stage twitchings of the muscles of both forearms and the right half of the face made their appearance. Patient was now unconscious and lay in bed on his right side in a state of flexion. Cerebro-spinal fluid was withdrawn under considerable pressure and no *Spirochæta pallida* were found. On the morning of August 19th, the third day of his illness, epileptiform seizures appeared and followed each other rapidly, culminating in a condition of status epilepticus. Within 16 hours patient had had 77 seizures which left him extremely exhausted. He rallied, however, and at the end of a week began to show signs of improvement. Jaundice occurred six weeks later, but the malady was tolerated without much discomfort. He has steadily improved in health and at present is up and about, apparently none the worse. Seizures have been regarded as a contra-indication to further treatment.

5. *Visual Disturbances.*—Among the 20 patients who have received more than 240 injections of tryparsamide, 4, or 20 per cent., have complained of dimness of vision. All were neuro-syphilitics and had received in addition intramuscular injections of mercury. In three the impairment was slight and cleared up when treatment was stopped. In one, an advanced bedridden patient, slight permanent visual defect remained. The symptoms made their initial appearances early in the course of treatment, although on one occasion no complaint was made until after the

second injection of the second course (the twelfth injection). The times of onset in the remaining three cases were from 12 to 48 hours following the sixth (twice) and ninth injections respectively.

6. *Local Reactions at the Seat of Inoculation.*—Twenty injections were given by the subcutaneous route; in one case on 11 successive occasions. No immediate or late reactions in the neighbourhood of the injection were observed.

Effect on Nutrition.

A striking feature of tryparsamide therapy was the remarkable effect of the drug on the state of nutrition. In the majority of cases a marked improvement in general health and increase of body-weight were recorded. The tonic effect of the drug was established and its value might be exploited in certain other diseases characterised by a general failure of nutrition.

Weekly weight records were kept and the chart below illustrates three varieties of response in body-weight that have occurred during the periods of treatment and drug-free intervals. At the end of the first course (eight to ten doses) of treatment a gain in weight was noted in 17 patients, or 85 per cent. of the series. The increase ranged from 1½ to 34 lb., or an average of a little over 7½ lb. for the series. A loss in weight took place in three cases, or 15 per cent., ranging from 1 to 9 lb., with an average of 5½ lb. The latter were all cases of advanced general paralysis, two of which rapidly deteriorated under treatment and died.

The increase or loss in weight, however, was not always sustained during the intervals or in the succeeding courses of injections. In no fewer than 29·4 per cent., where a pronounced increase had taken place during the first course, a loss occurred during the interval that followed. A gradual increase approached higher levels in 59 per cent. of the cases. Figures relevant beyond his stage are difficult to give as only two cases, or 11·1 per cent., of the series received three full courses of drug treatment, but it may be stated that on the whole the drug exercised a pronounced tonic effect on all the cases which were not affected by any serious complications during the period in which they were under observation.

I beg to acknowledge my indebtedness to Dr. R. M. Clark, medical superintendent of the institution, for permission to place on record the results of these investigations. The Wassermann reactions of the blood and spinal fluid were carried out at the Public Health Laboratory under the direction of Prof. W. W. C. Topley.

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A NOTE ON THE TREATMENT OF GENERAL PARALYSIS BY TRYPARSAMIDE.

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FOLLOWING reports on the undoubted efficacy of tryparsamide in cases of African sleeping sickness, this drug was advocated in the treatment of neurosyphilis, particularly general paralysis. The world-wide interest in the malarial treatment of the latter disease tended to divert attention from the arsenical compounds, but there are signs of a return to what appears to be the more rational method of treatment. In a recent address to the Liverpool Medical Association, Prof. Warrington Yorke said that the future successful treatment of general paralysis probably depends on tryparsamide or an allied drug. Difficulty in obtaining the drug has restricted investigation in this country, but extensive work is now being carried out in various hospitals. The results obtained here may prove interesting.

The Selected Cases.

In all, 17 cases of general paralysis were placed under treatment. We regarded as general paralytics those cases which, in addition to the usual physical and mental signs, gave the following readings on examination of the cerebro-spinal fluid; (1) Wassermann positive with 0·1 c.cm. fluid; (2) a paretic colloidal gold curve; (3) positive Ross Jones and Pandy tests; and (4) marked lymphocytosis. We also regarded a strongly positive serum Wassermann as additional evidence, as it is only very rarely that the blood in paresis gives a negative reaction. Although contraindicated by some authorities we included, in the 17, patients in all stages of the disease and three bed cases showing marked mental and physical deterioration.

We commenced in October, 1925, with six 1 g. doses of tryparsamide given at weekly intervals, 15 cases were treated by the intravenous route and 2 intramuscularly. During this period one patient was transferred to another hospital and one patient died. The latter had been regarded as a slowly dementing paretic of the simple facile type. He had been here for three years, his physical condition was good, and he showed only slight mental deterioration. He had no toxic symptoms whatever, but a week after his sixth injection he complained of feeling unwell. He developed a marked rise in temperature, followed by severe congestive seizures, and died within a few days. Post-mortem examination showed typical brain changes with marked congestion, but there was no excess cerebro-spinal fluid and no spirochætes could be found by dark-ground microscopy. The liver, kidneys, and spleen were somewhat congested, but otherwise normal.

During this preliminary course of treatment there were no toxic disturbances, eye complications, excitability, or other ill-effects, even among the bed cases. Accordingly we decided to increase the dose. Each patient now received eight 2 g. injections at weekly intervals half to one hour after the mid-day meal. *No other drug was administered in conjunction with the tryparsamide, as we did not wish to obscure any results that might be forthcoming.* For the same reason no alteration was made in the diet or environment of the patients during the treatment. Two deaths occurred before the course was completed, and in both instances patients were of the slowly dementing apathetic type; one was more advanced than the other and confined to bed. Death was similar to that mentioned above and followed a

period of severe congestive seizures accompanied by pyrexia. Post-morten examination was refused in one case and in the other the post-mortem findings were quite typical and there were no liver changes. The form of paresis present in these cases nearly always proves to be the most progressive, most resistive, and the least liable to undergo remission, whereas it is the expansive, active, megalomanic type which provides the greater number of stationary and protracted forms, and appears to be less resistive. Our subsequent results bear this out to a certain extent.

The number of cases now under observation was limited to 13. After conclusion of the treatment we allowed two months to elapse and then carried out further clinical laboratory investigations.

Clinical Findings.

Of the 13 cases only 2 failed to benefit. Improvement first showed itself during the months of January and February, and in all cases this improvement has held up to the present time of writing. Speech, tremors, and gait all improved, more especially the latter, and this was one of the first changes to be manifested. Argyll Robertson pupils, where present, were unaffected. Five cases, all steady and useful workers, have shown marked remission of mental and physical symptoms and are exceptionally well; three of them have been granted parole and the other two are being discharged to care of friends. Three cases previously unemployable and inclined to be dull, listless, and foolish, are now willing workers with some degree of initiative. Two bed cases recovered sufficiently to be up, and are capable of doing light ward work. One paretic of four years' standing has remained stationary mentally, but is improving physically. One case showed no change whatever. In the thirteenth case, a taboparetic with an alcoholic history, the physical condition gradually became worse. He developed bladder complications and broncho-pneumonia, and died two months after the course was finished. Throughout he was wonderfully clear mentally. Post mortem showed nothing of particular interest. Changes were most marked in the expansive type of paretic, and in the depressed, agitated type; the slowly dementing, facile, and apathetic form showed least change. There were no toxic disturbances of any kind and all except two of the patients gained weight.

Laboratory Findings.

Tests were carried out on the blood-serum and cerebro-spinal fluid of 13 cases of general paralysis before and after treatmnt by tryparsamide. In over 50 per cent. of the cases alterations took place in the colloidal gold curve and in the Wassermann reaction. The paretic curve showed a tendency to disappear with complete absence in four cases, while the Wassermann raction in both cerebro-spinal fluid and blood-serum showed a tendency to become weaker. These changes were most marked in those expensive and active paretics who had undergone such marked mental and physical improvement. In six cases the laboratory and clinical findings closely coincided.

Conclusion.

In dealing with the treatment of general paralysis there are certain factors always to be borne in mind which tend to obscure results and lead to misinterpretation. These are: (1) the possible tonic effect of arsenic, resulting in temporary improvement; (2) the beneficial effect of arsenic in certain meningeal complications which frequently accompany paresis; (3) the possibility of paretic blood-serum and cerebro-spinal fluid undergoing independent and marked variation; (4) the tendency to remissions.

Taking these facts into consideration, and in view of the limited number of cases which we had under observation, it is extremely difficult to come to any definite conclusion. As, however, only one course of treatment has been tried, and as the improvement which took place in the majority of cases has continued for about six months, we consider these clinical results, together with the coincidental laboratory findings, of sufficient import to justify further investigations along similar lines. When it is remembered that the successful treatment of ordinary syphilis by arsenic can only be brought about after a three years' course, it would appear, in view of the above results, that prolonged administration of tryparsamide in general paralysis is at least worthy of trial, particularly in the megalomanic forms.

It is a drug of low toxicity, readily soluble, and very easy to administer. That it has penetrating power is more or less confirmed by the astonishing results obtained in African sleeping sickness. The supplies used were manufactured by May and Baker, Ltd., by arrangement with the Rockefeller Institute.

Permission to carry out these investigations was granted by Dr. A. M. Dryden, the medical superintendent.

PORADENITIS, OR SUBACUTE LYMPHOGRANULOMATOSIS.

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THE following account of this condition, together with a description of two cases, may prove of interest. The disease, though uncommon, appears to be spreading, and unless it be kept in mind difficulty may occur in distinguishing it from conditions which have a different prognosis and require other treatment. It is possible that some of these cases are being classified as tuberculous adenitis, chronic lymphadenitis, syphilis, or lymphadenoma, but although there are resemblances there should be no difficulty in the separation of these cases.

The apparent increase of the disease may be due to greater accuracy in diagnosis. About 50 cases have been recorded in the foreign literature of the last two years. It has certainly become more common since the war, and it is possible that this is due to its transport by French colonial troops. As will be seen below, my first case contracted the disease in Africa.

Several names have been given to the disease. Most commonly it is termed subacute inguinal lymphogranulomatosis; an objection to this name is supplied by the fact that in my first case the glandular distribution was cervico-brachial, and other cases with a similar regional incidence appear to have occurred.[4] Moreover, the name lymphogranulomatosis is commonly applied to lymphadenoma in America and Germany. The French term, "poradenite," has much to be said for it; the appearance of the spongy semi-necrotic gland in its last stage deserves this name. It has also been called the fourth venereal disease.

Symptoms and Course.

The virus obtains entry through the genital mucosa in the majority of cases; in Case 1, however, it appears to have entered by the buccal mucosa. The incubation period would appear to be about three weeks. A small, easily missed herpetoid lesion, or a small papule is produced at the site of inoculation. A slow, painless enlargement of the regional lymph glands is noted about three weeks later. These are hard and not fixed at first; softening and matting occur later. Gradual enlargement proceeds for weeks or months, and then softening in one or more of the glands is observed. The softening is not accompanied by any marked appearance of inflammation. The softened gland, if untreated, slowly erupts through the skin, leaving sinuses which are slow to heal and prone to secondary pyogenic infection.

Symptoms are few apart from the glandular swellings. Pain is slight or absent, unless a nerve happens to be pressed upon. The gland is occasion-

ally tender, but this is not the rule. A degree of anæmia is found—this may explain the vague malaise which is experienced. Case 1 complained of pruritus, and it will be remembered that this symptom also occurs in lymphadenoma, but in a person just returned from the tropics pruritus must not obtain too much attention. There is a polymorph leucocytosis of mild degree in the early stages.

Progress is variable but slow, the disease lasting for months. No data are yet available as to the ease of infectivity and the risks of non-venereal infection.

Pathological Features.

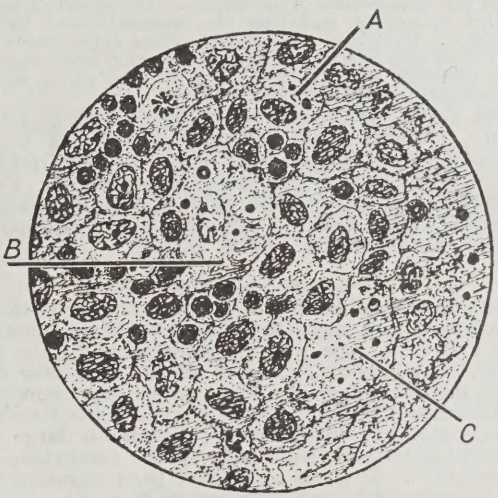
The entry of the virus causes an early proliferation of the lymph and plasma cells at the site of invasion—i.e., usually at the periphery of the gland. This change is followed by a much more massive proliferation of the endothelial cells of the reticulum. A nodule composed almost entirely of large cells very similar to the epithelioid cells of a tubercle is formed. These cells occasionally show two nuclei, and, owing to the rapidity of their proliferation, they commonly show mitotic figures. This is a point of some diagnostic importance; mitotic figures are not so frequent in other gland enlargements, neoplasm excepted. The frequency of mitoses is variable, however; Gamna[1] says that they are always very numerous, but Favre[2] takes objection to this. The probability is that both are right; in Case 1 the gland, in relatively early stage, shows many mitoses, but in the later stage, found in Case 2, mitotic figures can be found only on prolonged search.

The nodule of endothelium subsequently shows degeneration and colliquative necrosis, the centre being first affected. At the periphery proliferation progresses steadily, and the gland is slowly permeated by the newly-formed tissue which contains small foci of fluid, the appearance being well likened to that of a sponge. Other cells play a less important part. Polymorph leucocytes are fairly numerous, rather more than in a tubercle. Fibroblasts are little stimulated until the necrotic fluid is discharged, then they play a part in repair. Granular cells are moderately numerous, but are mainly basophil; eosinophil cells are scanty, a point of importance in the differential diagnosis from lymphadenoma. The vessels are little affected, there is a patchy congestion, and here and there œdema and some lymph stasis can be seen.

This description would have sufficed until about a year ago; then at about the same time and independently Gamna and Favre described a new feature, the presence of intracellular inclusions, which the former observer considered to be a protozoon and the causal virus; this view now meets with general acceptance. Some of the large endothelial cells can be seen to contain small globoid bodies varying between one and three micra in size. They readily take any nuclear stain, and, except for their larger size, they recall the appearance of the "encephalocytozoon" of encephalitis lethargica; like the latter, a clear halo is often to be seen surrounding them, but they stain much more readily. I find that they show a special affinity for well-matured methylene-blue; this stains them a deep blue-black colour, allowing them to be picked out from their surroundings readily. The chromophilic material is not evenly dispersed through the globoid, at any rate in the larger ones; in these it is sometimes collected into a denser peripheral layer and then recalls the appearance of an erythrocyte, staining and size excepted, or there is an accumulation in a horseshoe-shaped mass at one pole. In my two cases there was no hint of any acidophil substance in the bodies, and Favre does not find any; Gamna has described the presence of faintly staining acidophil areas, but there is nothing suggestive of the strongly acidophil structures of the malaria and Leishman parasites (see figure).

The nucleus of the containing cell stains well at first; it loses its staining properties later and cannot be made out. The parasites are then found first in the cell membrane and later are found extracellularly in between the healthy-looking cells and also amongst the necrotic débris in the centre of the nodule. The distribution of the parasite appears to be variable, however, for Gamna finds them to be scanty in the older parts of the lesion, while Favre notes that they are readily to be found in this position. In both my cases parasites are numerous, in the spreading margin and necrotic areas alike. The same parasite has been found in the primary lesion,[2] which resembles the glandular condition in type and termination of cell change.

The disease can be transmitted to guinea-pigs by inoculation of the necrotic fluid, but this fluid after



Semi-schematic drawing of lesion. Necrosis occurring to the right. At *A* is a cell with well-preserved nucleus containing parasites; at *B* a cell with degenerating nucleus containing parasites; at *C* the nucleus has disappeared.

filtration through the finer Berkefeld candles is no longer infective. Attempts to cultivate the organism have so far failed with all media.[1]

Clinical Records.

CASE 1.—Male, aged 32, has resided in Nigeria for about two years; health good except for mild malaria and what was diagnosed "low fever." He came to Mr. H. Chitty's out-patient department, and Mr. Chitty kindly transferred him to me for investigation. For about a year he has noticed swellings about the neck and arms, which gave little trouble unless knocked. He does not feel well and he easily tires. On careful questioning he admits that his skin has been troublesome lately—various parts itch without there being anything to be seen. Just before he was sent back to England the large epitrochlear gland of the right arm became soft and was removed; a diagnosis of "suppuration" was made.

Examination was disappointing except for the glandular swellings; these were left submaxillary, axillary less marked, cervical, especially a gland of the low cervical group on the right side; the latter was about the size of a small walnut. The glands were tender on firm pressure and were readily movable. The inguinal glands were little enlarged, perhaps more than the average for an adult, but to nothing like the size of the glands noted above. The spleen was just palpable. There was no scar to be found on the genital mucosa. The possibility of any venereal disease was denied.

Blood showed 80 per cent. hæmoglobin. Films showed well-formed erythrocytes with little more than the normal anisocytosis and no polychromasia. There were no malarial parasites to be seen. Polymorphs, 56·0; small lymphos., 24·6; large lymphos., 13·6; transitional, 3·0; eosinophils, 2·6; mast, 0·2 per cent. No abnormal types were found. The Wassermann reaction was positive; the tubercle complement fixation was strongly positive. The large cervical gland was punctured and films were stained by Giemsa and Leishman's methods. These showed a few eosinophil cells, few lymphoid cells for a lymph gland, and there were many large cells with palely staining nuclei. Amongst the latter some much larger cells were observed to contain small basophil bodies; I thought that these were Leishman bodies at first, but altered my opinion on finding that there was no acidophil structure present.

The patient was put on liq. arsenici hydrochlor. while the condition was being investigated, as a provisional

diagnosis of lymphadenoma had been made. He responded rapidly to this, and shortly reported that he felt stronger and that the glands were shrinking. As I was not satisfied with the diagnosis I had the largest gland excised; on section I found the appearances noted above. He continues to do well, and when last seen the largest gland was about the size of a haricot bean.

CASE 2.—For the clinical details of this case I have to thank Mr. Duncan Wood under whose care he was admitted to Cossham Hospital. The patient was a young adult male who has never been abroad. Contact was alleged in April, 1925, and the swelling was first noted in November. There was no penile scar. A single inguinal gland was enlarged to the size of a damson. No other swellings or symptoms were noted. Mr. Wood removed the gland for diagnosis and sent it to the department of pathology. He observed that it shelled out easily and that the wound healed by first intention. The gland presented the same appearances as in the former case except that necrosis was much more advanced. The parasites were numerous in all the parts, showing endothelial proliferation and necrosis.

The finding of a positive, more frequently a partially positive, Wassermann reaction appears to be not infrequent.[3] A cuti-reaction, using the material from the necrotic focus, has been practised by Frei [5]; eight cases of the disease gave a positive reaction; controls were negative. There was no complement fixation with this material as antigen.

Diagnosis and Treatment.

Diagnosis should be easy once the condition is remembered. A suspected gland should be punctured and a little of the pulp withdrawn and thin films made. These may be dried in air, or better fixed with methyl alcohol. Then stain one film with Leishman's stain and another with methylene-blue, counter-staining with eosin. Search for large cells containing blue bodies, firstly in the methylene-blue preparation. If these are found then compare with the Leishman film to determine whether there are any strongly stained red particles present. In the absence of the latter and of acid-fast bacilli the condition may be safely diagnosed poradenitis. It should be noted that in any necrotic gland small basophil bodies, fragments of pyknotic nuclei, are frequently to be found. If the features noted are not kept in mind a diagnosis of poradenitis will be made more often than is justified.

There are several treatments already. Excision was first practised, and in the early stages is radical. Radiotherapy has been given up, as it results in a massive fibrosis. The specific treatment is now emetine, with or without iodine. The former is given in daily dose of 1 gr. by the mouth, and is continued until 15 gr. have been given; a second or third course may be needed. Iodine has been given intravenously and by the mouth. Perorally it is best given as a 10 per cent. solution of iodine in 70 per cent. alcohol. Commencing with 10 drops in a little milk twice daily, the dose is slowly increased to 80 drops. I have given 200 drops of this strength of iodine, though not in this disease.[3] As is noted above, my case is doing well on arsenic. He takes ℥ iv. liq. arsenici hydrochlor., with ℥ xxv. acid hydrochlor. dil. p.c. t.d.s.

I have to thank Prof. I. Walker Hall for some advice and encouragement. The expenses of the research have been met by a grant from the Colston Research Fund.

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ARTIFICIAL LIGHT AT KING'S COLLEGE HOSPITAL.—Last week the Stock Exchange Dramatic and Operatic Society presented a new helio-therapeutic department to this hospital. The apparatus consists of three carbon arc lamps around which eight or ten patients can sit, and a mercury-vapour lamp for ward and localised treatment. The department was unlocked with a gold key by Mr. Archibald Campbell, the chairman of the Stock Exchange.

RESULTS OF THORACOPLASTY IN PHTHISIS.

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THE question raised by a study of the following statistics is whether various other possible operations should be adopted when artificial pneumothorax, partial or complete, turns out to be a failure on account of pleural adhesions. The claim for their adoption is based on the considerable number of patients upon whom, at this sanatorium, such operations have been performed during the last ten years. They have been followed up by regular inquiries after leaving the sanatorium, and in this way it has been possible to obtain a fair idea both of temporary and permanent results.

TABLE I.—*Thoracoplasty performed in 157 Cases of Pulmonary Tuberculosis. Results of 151 Cases Discharged from Sanatorium.*

Not yet discharged: 6 patients. Death caused by the operation in 12 cases = operation mortality of 7·6 per cent.

36 discharged as much improved 67 „ „ improved	} 103 (68·2 %)	
21 „ „ stationary or worse 27 „ „ dead	} 48 (31·8 %)	

Of the 151 discharged patients 150 had T.B. in sputum before operation.

T.B. disappeared on discharge in 52 cases (34·7 %)
„ still found „ „ 98 „ (65·3 %)

Up to March, 1926, thoracoplasty has been performed in this sanatorium in 157 cases. The temporary results are collected in Table I., from which it is seen that the operative mortality had been 7·6 per cent. The positive results are divided into two groups. Of these groups, "considerably improved" only contains those in which all symptoms have subsided, while "improved" contains those in which an undoubted improvement had taken place, so that the patients could walk about without fever, some of them also without T.B. in sputum, though with some symptoms of disease. All other cases are classified as "negative"; also those with a doubtful result, and those with a shorter time of improvement who failed again before discharge. According to this classification, the results on discharge of the 151 cases which had been discharged at the time the statistics were drawn up show a positive result in 68·2 per cent. a negative result in 31·8 per cent. T.B. in sputum had disappeared on discharge in 34·7 per cent.

A comparison of these results with other publications is shown on Table II., in which every endeavour has been made to ensure as uniform a classification

TABLE II.—*Comparative Thoracoplasty Results.*

—	No. of cases.	Operation mortality.	Excluded.	Positive results.	Negative results.
Alexander's compilation* of *all* cases published by authors from different countries.	1159	153 (13·2 %)	47 still under treatment. 28 unknown. } 75	664 (61·3 %)	420 (38·7 %)
Brunner's last statistics† from the chirurgical clinique in Munich for the years 1918–22.	117	13 (11·0 %)	—	75 (64·0 %)	32 (36 %)
Vejlefjord Sanatorium	157	12 (7·6 %)	6 still under treatment.	103 (68·2 %)	48 (31·8 %)

* Taken from the Surgery of Pulmonary Tuberculosis, by John Alexander, M.A., M.D., Lea and Fibiger, Philadelphia and New York, 1925.

† Taken from Die Chirurgische Behandlung der Lungentuberkulose, by Dr. Alfred Brunner, Johann Ambrosius Barth's Verlag, Leipzig, 1924.

as possible. The reason why our results are better than others is probably connected with the fact that all our patients have been operated on within the sanatorium (without any break in the sanatorium régime), combined with the fact that there is an experienced and technically well-equipped staff at hand to deal with these patients.

It may be of still greater interest to know how far the results can be expected to last. In the literature scarcely any statistics of the permanent results of thoracoplasty are to be found. The next table (III.)

TABLE III.—*Lasting Results of Thoracoplasty*

In 131 cases, discharged from sanatorium before March 1st, 1925. In March, 1926 (1–10 years after operation), the state of health of these 131 cases was :—

Fit for ordinary work	34	53 (40·5 %)
Fit for easier work	19	
Unfit for work		15 (11·5 %)
Death from tuberculosis (including operation deaths)		59 (45·0 %)
Death from other diseases		4 (3·0 %)

may therefore claim some special attention, as it shows the state of health of 131 patients whose discharge from the sanatorium took place more than one year before the statistics were made—i.e., one to ten years after operation. In these statistics are included all cases of death, inclusive of those dying as a direct result of the operation. It is seen that about *40 per cent. of the patients are able to work.* This figure can fairly be compared with the average permanent results of ordinary artificial pneumothorax. Out of the ten first cases (operated upon seven to ten years ago) seven patients declared themselves able to work. This example shows that the permanent results are distributed over the whole number of cases.

The fact that our patients at Vejlefjord Sanatorium are drawn chiefly from the well-to-do class must be borne in mind, but a study of many statistics shows that the results of artificial pneumothorax are much the same in both public and private sanatoriums, and it may therefore be anticipated that the same will hold good with regard to thoracoplasty. Moreover, the capacity of some of our patients has been very appreciable, many of them being fit for ordinary work such as clerks, farmers, pastors, and business men. Some of the patients have been through pregnancy and childbirth, and several of them are able to attend to ordinary house work.

From Table III. it is seen that the permanent results of thoracoplasty compare favourably with the results of artificial pneumothorax (A.P.). Naturally the percentage of capacity for work is higher in A.P. cases, if only the cases with complete A.P. without adhesions are considered. In these a permanently good result has been obtained by us in about 70 per cent. For several reasons a similar figure could not be expected among patients who show the indications for thoracoplasty. The simple fact that the disease in the former group has in no instance touched the pleura, whilst in the second group the pleura has in all cases been obliterated by adhesions, means a difference in the extent of the disease which must be taken into account. Moreover, the operative mortality in thoracoplasty and the different influences exerted by the operation upon the general condition of the patients must naturally detract from the good results compared with those of simple A.P. On the other hand, A.P. cases are so often handicapped by the presence of adhesions as to reduce the percentage of permanent cures by this method to an extent which allows thoracoplasty, in spite of its different dangers, to show a percentage of lasting cures equal to those of A.P.—namely, about 40 per cent.

In the tables no account has been taken of the extent of the rib-resections. The great majority of the patients in question have been treated with a *complete* thoracoplasty, leaving the one lung in a fully collapsed condition. In a minority the operation has been more or less partial. But in *all* cases the guiding principle has been to transform the chest into the shape which was thought to provide the best possible condition for an effective healing of the lesions.

In two of our cases the thoracoplasty was combined with the operation of apicolysis and transplantation of abdominal fat. In both of them this supplementary operation was indicated by the presence of a large apical cavity, and in both cases the additional apicolysis caused a final disappearance of bacilli. In seven of the cases the thoracoplasty was combined with phrenico-exeresis. This operation has, however, in certain quarters been recommended far more highly than, in our opinion, it deserves. As a matter of fact, we have not yet observed any case in which the phrenico-exeresis has afforded any additional benefit. Moreover, our results with thoracoplasty alone do not seem to us to need the very doubtful assistance supplied by phrenico-exeresis. Our experiments with this operation are being continued, and it remains to be seen if our opinion on this question will be changed.

In conclusion, we feel justified in considering the results of thoracoplasty well worth while the inconveniences involved therein, for undoubtedly it means a great improvement in the prospects of a group of patients whose outlook without the surgical treatment is extremely bad.

A NOTE ON THE ACTION OF GLYCERIC ALDEHYDE AND DIHYDROXYACETONE ON INSULIN HYPOGLYCÆMIA.

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AND
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ONE of the most important reactions in animal metabolism is the breakdown of glucose with the production of heat and ultimate formation of carbon dioxide and water, but despite the fundamental nature of the reaction there is little precise knowledge of the mechanisms involved or even the intermediate substances produced. There are, however, grounds for assuming that lactic acid is one stage in the biological oxidation of glucose, and, admitting this, the more elusive problem is presented as to what is the precursor of the lactic acid. Though it is not proposed to enter into a chemical discussion here, it may be stated with some assurance that at least two substances intervene between glucose and lactic acid, and that one of these contains no asymmetric carbon atom—that is, is optically inactive.

The effect of administration to animals rendered hypoglycæmic by insulin of glucose, or its isomerides, fructose and mannose, is well known, but so far as the authors are aware no systematic investigation has been carried out on any possible analogous action of degradation products of these simple hexoses, especially those containing three carbon atoms and having close relationship to lactic acid.

For these and for other reasons a certain importance has been attached to the two initial oxidation products of glycerol—viz., the aldehyde, glyceric aldehyde and the ketone, dihydroxyacetone; and it is with one aspect of the relation of these to carbohydrate metabolism that the present communication is concerned —namely, their action on hypoglycæmia induced by insulin in normal animals.

The substances employed were pure synthetic crystalline preparations and uncontaminated with each other. Thus it was possible to investigate the effects of each independently—a result not obtainable when, as has been frequently done, the crude material formed by direct oxidation of glycerol, the so-called "glycerose," was used.

In the experiments here described, mice and rabbits were used and the routine technique was to render the animals hypoglycæmic by insulin, to await onset

of typical symptoms, and then to determine by subcutaneous injection the efficiency or otherwise of the aldehyde or the ketone. In each case suitable control experiments were conducted and when necessary to secure the survival of the animal, coma or convulsions were relieved by glucose.

It was found that no beneficial action of any note was displayed on mice or on rabbits when even massive doses of glyceric aldehyde were administered. In two mice an apparent partial transitory recovery was observed, but throughout the series of experiments in each case where glyceric aldehyde was tested recourse had to be made to glucose as antidote to the hypoglycæmia. Hence it was concluded that glyceric aldehyde is not capable of replacing glucose in relieving insulin convulsions.

With dihydroxyacetone a completely opposite action obtained in similar animals, and in view of the interest of this result two experiments are recorded, in one of which mice were used, in the other a rabbit.

Experiment A with Mice.

Six animals were injected at the same time, each with 5 minims of standard insulin (B.D.H., Ltd.) diluted to 1 in 25 with 0·05 per cent. hydrochloric acid. The animals whose average weight was 35·5 g. were kept warm.[1]

No. 1. After 59 minutes, convulsions; 6 minims aqueous dihydroxyacetone injected; gradual and complete recovery.

No. 2. After 60 minutes, convulsions; 6 minims aqueous glyceric aldehyde injected. At 78 minutes transitory improvement followed by relapse. Relieved permanently by glucose.

No. 3. After 62 minutes, convulsions; 6 minims aqueous glucose injected which caused improvement for 16 minutes when relapse occurred. 10 minims aqueous dihydroxyacetone injected. In 15 minutes recovery complete and permanent.

No. 4. After 67 minutes, apparently normal when 6 minims aqueous glyceric aldehyde was injected; 5 minutes later the animal was in convulsions and 10 minims aqueous glucose was given. After a lapse of 10 minutes the animal again normal and remained so.

No. 5. After 75 minutes, in exceedingly violent convulsions. 6 minims aqueous dihydroxyacetone was injected and within 1 minute the animal was better and remained so.

No. 6. Retained as control.

Experiment B with Rabbit.

On April 12th a rabbit weighing 2500 g. was starved for 20 hours and on the following day was given 2 units insulin (B.W. and Co.). As no symptoms developed, the animal was fed in the evening and was again starved the next day. On the 15th, at 11 A.M., 4 units of insulin were given and convulsions began at 1.45 P.M.; these continued intermittently in the usual manner and after 50 minutes the animal, which was still having violent convulsions and was very collapsed, was given 1 g. of glucose subcutaneously. It recovered normally and was fed.

On the 19th the same animal, after having been fasted on the 18th, was given 4 units insulin at 11 A.M.; convulsions began at 12.45 P.M. and became very marked at 1.5 P.M. After violent convulsions it seemed to be moribund and was given 1 g. dihydroxyacetone subcutaneously. Two minutes later it had a very violent bout of convulsions and appeared to be dying with head retracted, limbs outstretched, and respiration very rapid and shallow. But hereafter it began to recover in a manner identical with that seen when glucose was injected; it lay quite relaxed, showed no excessive nervousness, and its breathing improved. In 15 minutes it was sitting up. However, at 3.45 P.M. the animal again collapsed and had slight convulsions. At 3.55 P.M. the blood-sugar was 0·049 per cent.; 1 g. dihydroxyacetone was injected at 3.56 P.M., when the animal promptly recovered. Analyses of the blood-sugar at 4.15 P.M. and at 4.45 P.M. gave respectively 0·086 per cent. and 0·096 per cent. At 4.45 P.M. food was given and the rabbit ate greedily.

Summary.

Before discussing the results obtained in vivo it is necessary to draw attention to the close chemical relationship existing in vitro between the two substances employed. The present authors[2] have succeeded in obtaining proof that glyceric aldehyde when dissolved in water is stable for an indefinite period, but that when rendered only faintly alkaline profound chemical rearrangement takes place with the production of two substances, one a highly reactive, extremely unstable enol which in turn passes to a limited extent into dihydroxyacetone. Conversely this last substance is equally stable in neutral solution but sensitive to alkali, giving rise to the same reactive enol. It is probable that a trace of aldehyde is also formed. The relationship in vitro under conditions of mild alkalinity is, therefore—

Glyceric aldehyde $\rightleftharpoons$ enol $\rightleftharpoons$ dihydroxyacetone.

It will be seen how close a similarity there is to the well-known interconversion of glucose and fructose in dilute alkali. Furthermore, Schmitz[3] has succeeded in preparing from glyceric aldehyde under these conditions α-acrose which is inactive fructose. Hence it is clear that alkali alone will effect the change:

Glyceric aldehyde ⟶ α-acrose ⟶ glucose.

On these theoretical grounds, therefore, one would have postulated that glyceric aldehyde and dihydroxyacetone would have been interchangeable in the body. However, when one examines the relations in vivo it it clear that the aldehyde is incapable of relieving the condition of hypoglycæmia while the ketone is as efficient as is glucose itself.

It is not possible to offer a satisfactory explanation of the results. It seems, nevertheless, not unreasonable to suggest that whatever it be which relieves convulsions after injection of glucose—i.e., whether it be this sugar itself or some derivative, then dihydroxyacetone is capable, in the body, of being converted into this substance and glyceric aldehyde is not, and that in the body the conversion of glyceric aldehyde to dihydroxyacetone does not occur in amount or at a rate which could be detected under the conditions of the experiment. It is, however, an undoubted fact that in the diabetic animal glyceric aldehyde can be converted into glucose, and in the normal animal can be completely oxidised to carbon dioxide and water.[4]

Reconciliation of these facts is not easy if one assumes glyceric aldehyde to be an intermediate product in normal carbohydrate metabolism. The present experiments tend rather to draw attention to the importance of dihydroxyacetone in this connexion.

Conclusions.

(1) In mice and in rabbits rendered hypoglycæmic by insulin, such hypoglycæmia is relieved by dihydroxyacetone and is not relieved by glyceric aldehyde. (2) The hypoglycæmic rodent cannot effect the conversion of glyceric aldehyde to dihydroxyacetone. (3) Dihydroxyacetone is a probable intermediate in the metabolism of carbohydrate.

The authors wish to express their gratitude to Dr. H. W. Dudley for conducting the observations on rabbits. The experiments on mice were carried out by J. A. H.

[1] The technique was essentially that employed by Irvine, Herring, and McLeod (Biochem. Jour., 1924, xviii., 1023).

[2] Communication to the Biochemical Society, Nov. 9th, 1925.

[3] Schmidt's Berichte, 1913, xlvi., 2327.

[4] Sansum and Woodyatt: Jour. of Biol. Chem., 1916, xxiv., 327.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.—The following new appointments in the Tropical Division have been made; Dr. V. B. Wigglesworth, to be assistant in the department of entomology from Sept. 15th; Miss Joyce Leishman, B.Sc., to be research student and demonstrator in the department of helminthology from Sept. 20th; Dr. Leslie J. Davis, to be research student and demonstrator in the department of tropical pathology and bacteriology from Oct. 1st; and Mr. H. S. Leeson, of the department of entomology, to be assistant to Dr. Ross in Southern Rhodesia for the purposes of carrying out research work in entomology. The post of senior laboratory assistant in the department of entomology, thus rendered vacant, has been filled by the appointment of Mr. H. J. Sutton. Mr. G. H. E. Hopkins, who assisted Dr. Buxton during the Samoan Expedition, has had his appointment extended to the end of the present year. As from Jan. 1st, 1927, Mr. Hopkins has been appointed to undertake research work in the West Indies into the activities of Stegomyia.

Reviews and Notices of Books.

BONE DISEASES.

The Inflammatory and Toxic Diseases of Bone. By R. LAWFORD KNAGGS, *M.C.*, F.R.C.S., Consulting Surgeon to Leeds General Infirmary; formerly Professor of Surgery in the University of Leeds. Bristol: John Wright and Sons, Ltd. 1926. Pp. 416. 20*s*.

GREAT difficulties beset an author who essays to write a treatise upon bone diseases. Exact knowledge of the ultimate meaning of the phenomena of so many of them is wanting; the relationship of signs and symptoms to the pathological process is obscure, so that he is driven to a meticulous description of the minute anatomy, gross appearances, and clinical features without being able to lay emphasis upon the really essential things. Prof. Knaggs has attacked the problem of writing what must necessarily be largely a descriptive treatise so successfully that the reader experiences none of the tedium so often associated with text-books of this kind. In general the author defines the disease and then describes the clinical features of it, thus naturally leading up to accounts of what may be called the museum appearances and histology, followed by a discussion of the pathology. What makes these pages so interesting is the inclusion of accounts of the cases upon which the original descriptions were based. Often, indeed, we read the discoverer's own words. Museums and libraries have been exhaustively searched for illustrative examples, and numerous cases from the author's own extensive experience have been added. How many of us know that the first patient suffering from leontiasis ossea, of whom we have a clinical account, was the son of Fourcade, a Perpignan surgeon? This boy, who began to suffer at 12 years of age, lived to 45, and a most remarkable photograph of his macerated skull appears on page 339. This particular section is a good example of how interesting a complete and scholarly description of an obscure disease can be made. But it is not only the rare conditions which receive such careful treatment. Should the reader desire information upon a common infection such as acute osteomyelitis, he will be sure to find it here, and at the end of the chapter a satisfyingly complete bibliography. There are nearly 200 illustrations, which include a number of exceptionally good microphotographs by Mr. G. R. Rodman.

The author is to be congratulated upon the production of a book which will undoubtedly, owing to its completeness, take its place as a work of reference, whilst at the same time it will be read with enjoyment by all interested in bone diseases.

PUBLIC HEALTH.

A Text-book of Public Health. Ninth edition. By E. W. HOPE, O.B.E., M.D., D.Sc., Professor of Public Health, University of Liverpool; and C. O. STALLYBRASS, M.D., D.P.H., Assistant Medical Officer of Health, City of Liverpool. Edinburgh: E. and S. Livingstone. 1926. Pp. 340. 15*s*.

THIS book has been largely rewritten and brought up to date; new chapters on epidemiology, maternity and child welfare, and industrial hygiene have been added. It now covers adequately, within the scope of 340 pages, the whole field of public health activity. We have examined it closely in order to detect any omission of modern work in the various provinces of hygiene, and are satisfied that no significant extensions of knowledge or changes of opinion have been overlooked by the authors. Even the quite recent work of Patsumi Takahasi and his fellow-workers on the extraction of the fat-soluble vitamin, biosterin, is noticed. Obviously a text-book of this kind suffers a little from its very quality of completeness. It must be compressed into small bulk and is therefore somewhat dogmatic. Moreover, the attempt to fit new theories into old sometimes gives rise to obscurity. For instance, on page 142 it seems to be accepted that sites recently made up by tipping of town refuse are hygienically unsuitable for dwelling-houses, although the influence of such soils on health, if any, is ignored in the section on p. 144, which deals with the relation of soil to disease. An ideal text-book for students on this subject would contain an introductory or concluding chapter dealing with the present state of our knowledge and practice of hygiene, and warning the student that many current views, being the product of empiricism, will probably have to be revised in the light of future scientific experiments. On the whole, however, the authors have successfully steered a middle course between the orthodoxy of the older sanitarians and the tendency to iconoclasm of the younger school. The book is published at a price which brings it within the reach of both the undergraduate and the post-graduate student, to both of whom and to their teachers we commend it without hesitation.

Organisation and Administration of the Public Health Department. By W. A. LEONARD, Chief Clerk and Statistician in the Public Health Department, Birmingham. London: Sir Isaac Pitman and Sons, Ltd. 1926. Pp. 148. 6*s*.

WITH the growth of modern public health departments, and especially of that side of their work which entails the preservation over long periods of records affecting children or persons suffering from chronic ailments, administrative technique has become of increasing moment. It is so important that no medical officer of health can afford to neglect it, and yet it involves so much attention to detail that the medical officer who tries to give this attention may have little time left for cultivating that broader outlook on preventive medicine which is still more essential. It is here that an efficient secretariat counts, and we welcome the publication of a book such as the one under review, which contains the fruit of a layman's long experience in the administration of health matters. Mr. Leonard deals very briefly with the various branches of public health administration, and the bulk of his book is made up of record forms—presumably those used in Birmingham—applicable to each branch. Some of these forms are based on models issued by Government departments, and others are no doubt specially adapted to the circumstances of the town where they were devised, but it is useful to have them bound together for reference. Here and there the letterpress shows a lack of familiarity with generally accepted public health methods, but on the whole it can be recommended to students preparing for a public health or sanitary inspector's qualification, and it will also be of interest to those actually working in public health departments.

"SHOCK" TREATMENT OF MENTAL DISEASES.

Traitement des Maladies Mentales par les Chocs. Par C. PASCAL, Médecin en Chef des Asiles publics d'aliénés de la Seine, et JEAN DAVESNE. Paris: Masson et Cie. 1926. Pp. 184. 2*s*. 6*d*.

A SMALL book which makes suggestive and interesting reading, though there is much in it which the English student will find puzzling, resulting from the habit of some French writers of multiplying divisions and subdivisions of the subject under discussion.

There are two parts to this work. The first deals with the rôle of emotion in the production of the psychoses, and concludes that emotional experiences, whether sudden and acute, or minimal and prolonged, must not be relegated to a secondary place in the causation of mental diseases. The authors insist that affect plays a direct and primary part in the genesis of the psychoses. They recall the work of Cannon, Widal, Abrami, and others, and point out the far-reaching impression of affect on the vegetative nervous system, and so on the whole organism.

Emotions play their part by the biochemical changes they set up. The phenomena of anaphylaxis, sensitisation, desensitisation, hæmoclasic crises, and the proteopexic functions of the liver are all used skilfully by the authors to illustrate the importance of emotional factors in the causation of the psychoses. The second part of the book deals with actual treatment by "shock" methods, such as abscess formation, the injection of peptones and of nucleins, infectious diseases, malarial therapy, tuberculin injections, and the use of radio-active substances. Emotional experiences as curative agents are also discussed, with the mechanism by which such cures might be explained in biochemical terms. The authors may, we believe, lay claim to an original method of "shock" therapy. It consists of the intramuscular injection of blood obtained from a patient who is convalescent after a course of "shock" therapy. The patient giving the blood must obviously be free from syphilis and tuberculosis, and a simple test for determining the compatibility or incompatibility of the two bloods is described. The authors state that satisfactory results are obtained, and that remarkable improvements in the general condition follow a course of these blood injections, which they term "homohémothérapie."

Dr. Pascal and her collaborator have written a work which will be enjoyed by all practising psychiatrists. Some of it may be speculative, but much is original, and suggestive of new outlooks on mental disorders and on their treatment.

PEDIATRICS.

Diseases of the New-born. By J. A. FOOTE, M.D., Professor of Children's Diseases, Georgetown, U.S.A. London: J. B. Lippincott. 1926. Pp. 231. 21*s*.

THIS work, which is described as a monographic handbook, has been written by Prof. Foote in collaboration with five members of the Georgetown Medical Faculty, and gives a comprehensive view of the subject both from the medical and the surgical points of view. It does not confine itself to disease, but contains useful accounts of the routine management of new-born infants and of breast-feeding. Birth palsies and hæmorrhage hardly receive the attention which they deserve, and the only reference to the important work of Schwartz is a footnote on birth hæmorrhage and palsies. Skin affections are described fully, and are particularly well illustrated. A good account is given of the early manifestations of congenital syphilis and their treatment; the author has obtained the best results with the arsphenamin compounds. A most useful chapter contains detailed instructions on the technique of various diagnostic and therapeutic measures, including cistern puncture. This book is clearly written and well illustrated; it should be especially useful to general practitioners who undertake midwifery.

Diagnostik und Therapie der Kinderkrankheiten. Fourth edition. By Prof. F. LUST (Karlsruhe). Berlin and Vienna: Urban and Schwarzenberg. 1926. Pp. 508. M.10.50.

THE fourth edition of Prof. Lust's text-book contains numerous additions throughout the text with but little alteration in form. Close printing and the absence of illustrations render this book much more comprehensive than is indicated by its size, and the ground which is covered is unusually extensive. Scarcely any space is devoted to questions of ætiology or pathology, but concise, condensed accounts are given of the diagnosis and treatment of almost every variation of disease met with in infancy and childhood. A large proportion of the work is devoted to treatment, the author's procedure being to present one method in detail rather than to discuss and compare a number of different ones. The final section contains a large amount of useful information on therapeutics, giving the composition of cereals and other preparations used for infant feeding, and the doses of drugs suitable for different ages. A work of reference for practitioners, this book may be strongly recommended.

Von den Akut-Infektiösen Respirationsstenosen der Kinder. By Dr. DIONYS POPISCHILL (Vienna). Berlin: S. Karger. 1926. Pp. 42. M.2.40.

THIS monograph was to some extent written in response to a series of articles which appeared in the *Deutsche med. Wochenschrift* during the last two years. The author's views differ widely from those of A. Schlossmann, the writer of the first of these articles, who considered that the serum treatment of diphtheria had rendered early tracheotomy unnecessary in all but exceptional cases. Dr. Popischill emphasises the difficulty of differential diagnosis in laryngeal obstruction, or perhaps its impossibility, stating that he has been unable to ascertain whether the infection had been diphtheritic not only in some children who had recovered, but even by post-mortem examination of some fatal cases. He has, moreover, found that the effects of serum in definitely diphtheritic cases has been both too slow and too uncertain to obviate tracheotomy in many patients. He is insistent upon the variability of symptoms and course in different epidemics, and describes the changes which he has observed in the type of disease in Vienna since the 'nineties; this "Genius epidemicus" is to him one of the significant factors in prognosis and treatment. Dr. Popischill considers that low tracheotomy has many advantages over intubation, and that its early application is the safest course in a large number of cases of primary laryngeal diphtheria. He draws attention to the high mortality in cases of secondary tracheotomy after unsuccessful intubation. The relative indications for these two measures in different types of case are fully discussed, as are the uses of morphia, open-air treatment, and baths. This monograph should be of considerable interest to all who are specially concerned with the treatment of infectious fevers.

HANDBOOK ON MEDICAL ELECTRICITY AND RADIOLOGY. By JAMES R. RIDDELL, F.R.F.P.S. Edinburgh: E. and S. Livingstone. 1926. Pp. 239. 8*s*. 6*d*.

THIS handy little volume is written for the student and is intended as a survey of those physical agents which he will find of value in the practice of medicine. The first two chapters are devoted to electrotherapeutics. Diathermy, the most potent of all recent forms in which electrical power has been brought to the aid of the doctor, is adequately dealt with. A chapter is devoted to the rationale and diagnostic use of electrical currents in the examination of nerves and muscles, and includes ten pages of tables and diagrams of motor points. It is a short but very useful section. Passing to X rays, Dr. Riddell summarises the physical aspect of the subject, and succeeds in outlining the salient points of the action of these rays on the living tissues. The diagnostic and therapeutic uses of X rays and radium are compressed into 145 pages, and a few pages on carbon dioxide snow complete the book. When detailing the dangers attendant on the use of radiations, Dr. Riddell states that "the Committee of the National Physical Laboratory has issued recommendations." These recommendations were in fact drawn up by the X Ray and Radium Protection Committee, which is representative of practically all X ray interests. This committee includes a member of the staff of the National Physical Laboratory, which laboratory undertakes to carry out inspection of apparatus and departments, issuing reports as to whether or not these comply with the recommendations.

The author has undertaken an exceedingly difficult if not an impossible task in attempting to give a summary of so many big subjects in so small a compass, and, up to a point, has succeeded fairly well. The book is to some extent marred by the poor quality of the illustrations, which are neither well selected nor

well reproduced. A diagram purporting to represent the normal stomach and duodenum pictures the last-named organ curling inwards towards the spine. But, with its limitations, the book will serve a useful purpose. An outline of this sort represents the minimal equipment which should be possessed by modern practitioners of medicine, and this volume can be recommended to those who have no time to study the subject in more detail.

THE PEAKS OF MEDICAL HISTORY.

An Outline of the Evolution of Medicine. By CHARLES L. DANA, A.M., M.D. New York: Paul B. Hoeber. 1926. Pp. 105. $3.

THIS is a useful little book although of necessity sketchy; an attempt to compress the details of medical history from Hippocrates to Jenner and later into a space of 105 pages leaves a mere outline. Dr. Dana divides the term with which he deals into six periods, the peaks being Hippocrates, the Alexandrian School, Galen, the Renaissance under Vesalius, Harvey and the beginnings of modern physiology, and Jenner and modern medicine. There are a number of excellent illustrations and some useful bibliographical notes, although the statement on p. 97 that Arnold of Villanova was the author of the Regimen Sanitatis Salernitanum requires modification. Another statement on p. 66 should be corrected in a second edition. Dr. Dana, in speaking of Cardan's De Vita Propria, says it "is placed among the three great autobiographies of literature; the other two being Cæsar's 'Annals' and Rousseau's 'Confessions.'" The Annals of Cæsar must come from the same library as that Second Epistle to the Ephesians mentioned by Dickens, and we think that there are other autobiographies which certainly take precedence of those mentioned by Dr. Dana.

JOURNALS.

JOURNAL OF MENTAL SCIENCE.—A special number of this journal is entirely devoted to the presidential address delivered by Lieut.-Colonel J. R. Lord last July at the annual meeting of the Royal Medical Psychological Association. This address contains many valuable and practical suggestions. He is anxious that clinical meetings under the auspices of the Association should be held for much smaller areas than its Divisions now comprise, and that they should not be limited, as heretofore, to members of the Association, but should be open to general practitioners and others in the neighbourhood who might be interested. He further suggests the creation and publication of an authoritative medico-psychological glossary of terms in everyday use in psychiatry and psychology, and appears to have some confidence that the definitions of the glossary would be of general acceptance. Colonel Lord further set before his audience the lofty ideal that every individual case of mental disorder should from its commencement be treated as one for special research; indeed, that there should be no distinction between what is known as "routine practice" and "research." He makes eloquent appeal for the establishment of team-work wherever mental disorder is treated, emphasising the point that the problems of most cases are not to be solved by the unaided effort of any one branch of medicine. It is not to be assumed that in any one case psychogenic ætiological factors are alone at work even if the results of physical examination are negative; nor, similarly, can it be assumed that because physical factors are operating, psychogenic factors are absent. One of the reasons for the issue of this special number is to afford the Association time for the consideration of certain resolutions arising out of the presidential address which will be brought forward at the November quarterly meeting. These resolutions formulate a scheme for the furtherance of research and clinical psychiatry, and a close study of Colonel Lord's address may convince many of the importance of the scheme.

STUDENTS' GUIDE—SESSION 1926–27.

DENTAL SURGERY.

REGISTRATION on the Medical Register entitles a practitioner to practise as a dentist, although he cannot register as such without degree or licence in dentistry; but few dental appointments at general or special hospitals or dispensaries are available save to those with a special diploma.

In THE LANCET of August 28th we outlined the constitution of the Dental Board of the United Kingdom, and the regulations in regard to the registration of dental students.

The Examining Bodies in Dentistry which grant degrees or diplomas in the subject are as follows:—

Royal College of Surgeons of England.—Licence in Dental Surgery.

Royal College of Surgeons, Edinburgh.—Licence in Dental Surgery. The College also grants a Higher Dental Diploma which is registrable in the Dentists Register as an additional qualification.

Royal Faculty of Physicians and Surgeons of Glasgow. Licence in Dental Surgery. The curriculum, which is similar to that of Edinburgh, includes in addition dental bacteriology.

Royal College of Surgeons in Ireland.—Licence in Dental Surgery.

University of Birmingham. — Dental licence; degrees of Bachelor and Master of Dental Surgery (B.D.S. and M.D.S.).

University of Bristol.—Licence in Dental Surgery; degrees of Bachelor and Master of Dental Surgery (B.D.S. and M.D.S.).

University of Durham.—Licence in Dental Surgery; degrees of Bachelor of Dental Surgery (B.D.S.) and of Master of Dental Surgery (M.D.S.).

University of Leeds.—Licence in Dental Surgery; degrees of Bachelor of Dental Surgery (B.Ch.D.) and Master of Dental Surgery (M.Ch.D.).

University of Liverpool.—Licence in Dental Surgery; (L.D.S.); degrees in Dental Surgery (B.D.S. and M.D.S.).

University of London. — Degree of Bachelor in Dental Surgery.

University of Manchester.—Degrees of B.D.S.; and a licence in Dentistry.

University of Sheffield.—Degree of Bachelor of Dental Surgery; and the diploma of Licentiate in Dental Surgery.

Queen's University of Belfast.—Licentiate in Dental Surgery, Bachelor of Dental Surgery, and Master of Dental Surgery.

In the following syllabus the respective requirements of the various examining bodies in dentistry are set forth, together with the facilities for dental study offered by certain other institutions.

THE EXAMINING BODIES IN DENTISTRY.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND grants a diploma in Dental Surgery under the following regulations, which apply to all candidates who have passed the required Preliminary Examination in General Education on or after Jan. 1st, 1923.

1. Candidates for the Licence in Dental Surgery of the Royal College of Surgeons of England are required to pass one of the Examinations in General Education recognised by the Conjoint Examining Board in England, and the Pre-Medical Examination in Chemistry and Physics conducted by that Board or one of the examinations recognised in lieu thereof, before they commence the curriculum of professional study for the Licence extending over four years.

2. Candidates who produce evidence of having been registered by the General Medical Council as Medical or Dental Students on or after Jan. 1st, 1923, will be considered to have passed the required Preliminary Examination in General Education and the Pre-Medical Examination.

3. Candidates who hold the degree of D.M.D. Harvard, D.D.S. Pennsylvania, D.D.S. Michigan, D.D.S. Illinois, D.D.S. St. Louis, Missouri, D.D.S. Northwestern University, Chicago, D.D.S. Minnesota, D.D.S. Tufts College, Boston, B.D.S. Sydney, or the Licence of the Dental Board of Victoria, Australia, are not required to pass these Examinations.

First Professional Examination.—1. The First Professional Examination consists of Part I. Dental Mechanics, Part II. Dental Metallurgy and the Properties of Dental Materials, and Part III. Section (*a*) General Anatomy and Physiology, Section (*b*) Dental Anatomy and Physiology, and is held in January or February, April, and September or October in each year.

2. Candidates may present themselves for the several Parts of the First Professional Examination together or separately, but before admission to any part of the Examination they must produce evidence of having passed the required Preliminary Examination in General Education and the required Pre-Medical Examination or a certificate of having been registered as a Medical or Dental Student by the General Medical Council.

Part I. *Dental Mechanics.*—3. This Examination is a practical one, conducted in the Mechanical Laboratory of one of the Dental Hospitals in London.

4. Candidates must give 21 days' notice in writing of their intention to present themselves for the Examination, and at the same time forward certificates :—

(1) Of having been engaged during a period of not less than two years in acquiring a practical familiarity with the details of Dental Mechanics. One year at least of this study must be taken in the Mechanical Department of a recognised Dental Hospital where the arrangements for teaching Dental Mechanics are satisfactory to the Board of Examiners in Dental Surgery. Part or the whole of the rest of the course may be taken as a pupil with a competent dentist provided that time spent as a private pupil shall be at least twice the time required for the corresponding instruction* taken at a Dental School.

(2) Of having attended at a recognised Dental Hospital and School: (*a*) A course of lectures on Dental Mechanics; (*b*) a course of Practical Dental Mechanics, including the manufacture and adjustment of 6 dentures and 6 crowns.

6. Any candidate referred at this Examination who does not hold a registrable Dental Qualification will be required, before admission to re-examination, to produce a certificate of having received three months further instruction under the conditions specified in Certificate (1) paragraph 4.

Part II. *Dental Metallurgy and the Properties of Dental Materials.*—7. This Examination is conducted by written paper.

8. Candidates must give 21 days' notice in writing of their intention to present themselves for the Examination, and at the same time forward a certificate :—Of having attended at a recognised Dental Hospital and School: (*a*) A course of lectures on Dental Metallurgy; (*b*) a course of Practical Dental Metallurgy.

9. Any candidate referred at this Examination who does not hold a registrable Dental Qualification will be required, before admission to re-examination, to produce a certificate of having worked in a Dental School, to the satisfaction of the Dean, for a further period of three months.

Part III. (*a*) *General Anatomy and Physiology*, (*b*) *Dental Anatomy and Physiology.*—10. This Examination is partly written and partly oral.

11. Candidates may enter for Section (*a*) only or for Sections (*a*) and (*b*) together on producing the required certificates, but they will not be allowed to proceed with Section (*b*) until they have passed in Section (*a*). In the case of a candidate who enters for both Sections and fails in Section (*a*) the fee paid for admission to Section (*b*) will not be forfeited, but will be credited to the candidate on readmission to examination in that Section. Candidates who enter for both Sections together may pass in Section (*a*) although failing to pass in Section (*b*).

12. Candidates must give 21 days' notice in writing of their intention to present themselves for the whole or for one Section of this examination and at the same time forward certificates :—

(1) For Part III. (*a*). Of having attended at a recognised Medical School: (*a*) Courses of instruction in Anatomy, including special demonstrations on prepared dissections during three terms; (*b*) a course of dissections to include, if possible, the head and neck, during one term; (*c*) courses of instruction in Physiology, including General Biology, Biochemistry, and Biophysics, during three terms; (*d*) a course of instruction in Histology.

(2) For Part III. (*b*). Of having attended at a recognised Dental School: (*a*) A course of instruction in Dental Anatomy and Physiology; (*b*) a separate course of instruction in Dental Histology, including the preparation of Microscopical Sections.

13. A candidate referred at this examination who does not hold a registrable Dental Qualification will be required, before readmission to Section (*a*), to produce a certificate of three months' additional study of Anatomy and Physiology at a recognised Medical School, and will be required before readmission to Section (*b*) to produce a certificate of having worked in a Dental School, to the satisfaction of the Dean, for a further period of three months.

14. *Exemptions.*—Candidates who have passed Section I. of the First Professional Examination of the Conjoint Examining Board in England, or who produce evidence of having passed the Examination in Anatomy and Physiology for a degree, or other qualification, in Medicine or Surgery, registrable under the Medical Act of 1886, or for the degree of M.B. or M.D. of a Foreign or Colonial University recognised by the Conjoint Examining Board in England, are not required to pass Section (*a*).

Second Professional Examination.—1. The Second Professional Examination is held in February, May or June, and November in each year, and consists of: Part I., General Surgery and Pathology; Part II., Dental Surgery and Pathology, and Practical Dental Surgery.

2. Candidates who have passed the First Professional Examination at least four months† previously may present themselves for Part I. only on producing the certificates mentioned in paragraph 6 of this section, or they may enter for the whole Examination at one time on producing the certificates mentioned in paragraphs 6 and 10 of this section.

3. Candidates must pass in Part I. before proceeding to Part II.

4. Candidates who enter for the whole Examination at one time may pass in Part I. although failing to pass in Part II.; but if they fail to pass in Part I. they will not be allowed to proceed with the Practical and Oral Examinations in Part II. In such cases the fee paid for admission to Part II. will not be forfeited, but will be held over until such time as the candidate is readmitted to examination in that Part.

Part I. *General Surgery and Pathology.*—5. This Examination is partly written and partly oral.

6. Candidates must give 21 days' notice in writing of their intention to present themselves for this Examination, and at the same time forward certificates :—

(1) Of having attended at a recognised Medical School: (*a*) A course of instruction‡ in Surgery during two terms; (*b*) a course of instruction in Medicine during two terms; (*c*) a course of instruction in General Pathology (including Bacteriology) during two terms. (2) Of having acted as Surgical Dresser in the Out-patient Department of a recognised Hospital for three months. (3) Of having attended, at a recognised Hospital or Hospitals, the practice of Medicine

* This instruction may be taken prior to the date of passing the Examination in General Education and the Pre-Medical Examination, but will not be counted as part of the required four years of professional study unless taken after passing the Pre-Medical Examination.

† The interval of six months is not required in the case of a colonial or foreign dentist.

‡ These courses of instruction must be attended after the completion of the courses in Anatomy and Physiology.

and Surgery, including clinical lectures, for 12 months. (4) Of being 21 years of age.

7. Any candidate referred at this Examination who does not hold a registrable Dental Qualification will be required, before admission to re-examination, to produce a certificate of such additional study during three months at a recognised Medical School and Hospital as the Teachers of the School may determine.

Exemptions.—8. Candidates who are Members of the College or who have passed the Examination in Surgery of the Conjoint Examining Board in England, or who produce evidence of having passed the Examination in Surgery for a Degree, or other Qualification in Medicine or Surgery registrable under the Medical Act of 1886, are not required to pass Part I. of the Second Professional Examination.

Part II. *Dental Surgery and Pathology.*—9. This Examination is partly written, partly oral, and partly practical. The oral examination is conducted by the use of preparations, casts, drawings, &c. At the practical examination candidates may be examined :—

(*a*) On the treatment of Dental Caries, on the preparation and treatment of teeth by filling with gold or other material, by inlaying or by crowning, and on other operations in Dental Surgery. (Candidates must provide their own instruments.) (*b*) On the treatment of abnormalities of position of the teeth of children. (*c*) On Clinical cases.

10. Candidates must give 21 days' notice in writing of their intention to present themselves for this Examination, and at the same time forward certificates :—

(1) Of having been engaged during four years in the acquirement of professional knowledge subsequently to the date of registration as a Medical or Dental Student, or of having passed the Pre-Medical Examination conducted or recognised by the Conjoint Examining Board in England. (2) Of having attended at a recognised Dental Hospital and School : (*a*) A course of Dental Surgery and Pathology ; (*b*) a separate course of Practical Dental Surgery ; (*c*) a course of Dental Bacteriology ; (*d*) a course of Dental Materia Medica ; (*e*) a course of practical instruction in the administration of such Anæsthetics as are in common use in Dental Surgery. (3) Of having attended at a recognised Dental Hospital and School, or in the Dental Department of a recognised General Hospital, the practice of Dental Surgery during two years.

11. Any candidate referred at this Examination who does not hold a registrable Dental Qualification will be required before admission to re-examination to produce a certificate of three months' additional study at a recognised Dental Hospital.

Fees.—The fee for the Diploma in Dental Surgery is 20 guineas.

Synopses of examinations and all further information can be obtained from the Director of Examinations, Examination Hall, Queen-square, London, W.C. 1.

ROYAL COLLEGE OF SURGEONS, EDINBURGH.—Regulations giving a list of Preliminary Examinations recognised for obtaining the Licence in Dental Surgery, as well as of the subjects of the Professional Examinations, may be obtained from Mr. D. L. Eadie, Clerk to the Royal College of Surgeons, at 49, Lauriston-place, Edinburgh. Candidates must produce certificates of having, subsequently to the date of registration, been engaged for four years in professional studies and of three years' instruction in Mechanical Dentistry from a registered dental practitioner, except in the case of previously registered medical practitioners, when two years will be considered sufficient. Candidates must also have attended a course of instruction at a University or in an established school of medicine or in a provincial school specially recognised by the College as qualifying for the Diploma in Surgery. In addition they will be required to have attended in a recognised dental hospital, or with teachers recognised by the College, special courses of lectures and instruction in Anatomy and Physiology (Human and Comparative), Surgery, Pathology, Materia Medica, Dental Histology, and Practical Dental Mechanics and Metallurgy ; two years' attendance at a dental hospital or the dental department of a general hospital recognised by the College. Practical instruction in Mechanical Dentistry from a registered Dentist, or in the Mechanical Department of a recognised Dental Hospital and School, for three years. Candidates who have passed the First and Second Examinations for the Triple Qualification will be exempt from the First Dental Examination, and will have the advantage of being admissible either to the Final Dental Examination or to the subsequent Examination for the Triple Qualification, or to both. But the First Dental Examination will not be held as equivalent to the First and Second Triple Examinations, and will admit to the Final Dental Examination only. Candidates who are Licentiates of this College or who may be registered medical practitioners will be required to produce certificates of attendance on the special subjects only and will be examined in these only for the dental diploma. First Professional Examination : The candidate must have attended the required courses. The examination embraces (1) Chemistry and Physics ; and (2) Anatomy and Physiology. The fee is £5 5*s.* for the complete examination, and £3 3*s.* is payable for each division. In all cases of rejected candidates the fee for re-entry is £3 3*s.* Second Examination : The candidate must have attended the remaining courses of the curriculum, must produce certificates showing that he is 21 years of age, and must pay a fee of £10 10*s.*, for re-entry £5 5*s.* The examination embraces (1) Surgery and Medicine ; and (2) the special subjects of Dental Anatomy and Physiology, Dental Surgery and Pathology, Dental Materia Medica, Dental Mechanics and Dental Metallurgy, with a practical as well as the written and oral examinations in the subjects of Dental and Oral Surgery, Pathology, and Mechanics. The candidate will be tested in the Treatment of Dental Diseases, in Operative Dentistry, the Administration of Anæsthetics, Orthodontics, and in Prosthetic and Mechanical Dentistry. Candidates who claim exemption from the First Dental Examination on the ground of having passed the First and Second Triple Qualification Examinations or other recognised examinations will, before being admitted to the Second Dental Examination, be required to pay the total fee of £15 15*s.* payable for the dental diploma. Candidates applying for copies of Regulations should state date of registration as a dental student. Fees and schedules must be lodged with the Clerk not later than one week before the examination.

Separate Regulations are issued for candidates registered as Dental Students after Jan. 1st, 1923, for whom there is a much more extended course.

Higher Dental Diploma.—The College grants a Higher Dental Diploma which is registrable in the Dentists Register as an additional qualification. Every candidate for the Higher Dental Diploma shall produce evidence that he has been engaged in the study or practice of his profession as a Registered Dentist for at least one year subsequent to his having obtained the Licence in Dental Surgery of the College, or a Licence or Qualification in Dental Surgery specially recognised by the College. Particulars as to the examinations can be obtained from Mr. D. L. Eadie, Clerk to the Royal College of Surgeons, 49, Lauriston-place, Edinburgh. The fee payable by Licentiates of the College is £15 15*s.* For all other candidates £21. A fee of £10 10*s.* is retained for examination expenses in the case of referred candidates.

The examination embraces the following branches of Dental Science and practice : Dental Surgery, Anatomy, Pathology and Bacteriology, Prosthesis, Anæsthesia, and Dental Radiology. The examination will be clinical and practical as well as written and oral. Candidates will be expected to show a high degree of knowledge and skill.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—The regulations as to certificates, curriculum, number, and subjects of examinations, fees, &c., are in effect similar to those of the Royal College of Surgeons of Edinburgh, but embrace Dental Bac-

teriology. Candidates can enter for the First Examination in three divisions, the first embracing Physics and Chemistry, the second Dental Metallurgy and Dental Mechanics, and the third Anatomy and Physiology. The examination in Dental Mechanics is practical; and there is at the Final Examination an examination in Practical Dentistry conducted in a dental hospital. Copies of regulations, &c., to be obtained from Mr. Walter Hurst, Registrar, Faculty Hall, 242, St. Vincent-street, Glasgow. Candidates applying for Regulations should state date of registration as a dental student.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—Candidates for the licence in Dental Surgery are required to pass three professional examinations, and to produce certificates of having, subsequently to registration as a Dental Student, passed the examination in Biology, and attended courses of instruction in the following subjects at a recognised school of medicine: (*a*) Human anatomy, with dissections and demonstrations, for three academic terms. (*b*) Physiology, theoretical and practical, including Dental Physiology lectures for two academic terms. (*c*) Histology, for one academic term. (*d*) Chemistry and Physics as applied to Dentistry. For the second examination certificates must be produced of having attended, at an institution recognised by the College for the purpose, the following courses: (*a*) General Pathology (including Bacteriology) for three academic terms. (*b*) Medicine for two academic terms. (*c*) Surgery for two academic terms. (*d*) The practice of a general hospital, with certified instruction in Clinical Medicine, Clinical Surgery, and Venereal Diseases, for three academic terms. For the final examination evidence must be produced of having been engaged during a period of two years in acquiring a practical familiarity with the details of Mechanical Dentistry under the direction of the Superintendent of the Mechanical Department of a recognised Dental Hospital where the arrangements for teaching Mechanical Dentistry are satisfactory to the Council of the College; of having attended, at a recognised institution, courses of instruction in (*a*) Dental Surgery and Pathology, Orthodontia, and the Materia Medica and Therapeutics applicable to Dental Surgery. Lectures. Two courses. (*b*) Dental Mechanics. Lectures. Two courses. (*c*) Anæsthetics. One course. (*d*) The practice of a Dental Hospital, or of the Dental Department of a General Hospital. Twenty-four calendar months. (*e*) Dental Metallurgy. (*f*) A course of Radiology; of having been engaged during four years in the acquirement of professional knowledge subsequently to the date of registration as a Dental Student; four years of professional study; and of being 21 years of age.

The subjects of the first examination are Anatomy, General, and Physiology and Histology. For the second examination (*a*) General Pathology (including Bacteriology), (*b*) Medicine and Surgery. For the Final Examination, General Surgery and Dental Pathology, with the Materia Medica and Therapeutics applicable to Dental Surgery, Dental Mechanics and Metallurgy, Anæsthetics, Orthodontia. Candidates must pass in all the subjects set at each examination which in the second and final parts will be partly vivâ voce and partly practical, and will include the examination of patients and the performance of dental operations. The total fee for the Diploma in Dental Surgery is 21 guineas.

UNIVERSITY OF BIRMINGHAM.—The teaching of Dentistry is undertaken by the University acting in association with the Birmingham Dental Hospital and the Birmingham Clinical Board. The instruction at the Dental Hospital is carried out under the direction of the University Dental Clinical Board, so that students may fully qualify themselves for the Dental Diploma (L.D.S.) of this and other universities and licensing bodies. There is a special and well-equipped Dental Museum: The "John Humphreys Odontological Museum." An Entrance Exhibition, value £37 10*s.*, is awarded annually at the commencement of the winter session. The following are the regulations for Degrees in Dentistry:—

1. The degrees conferred by the University are those of Bachelor and Master of Dental Surgery (B.D.S. and M.D.S.). 2. All candidates for these degrees must pass the same Matriculation Examination as that required from candidates for Medical Degrees. 3. The degree of Bachelor of Dental Surgery is not conferred upon any candidate who has not obtained a Licence in Dental Surgery. The candidate is not eligible for the degree until a period of 12 months has elapsed from the passing of his examination for the Licence in Dental Surgery. Of this period at least six months must be spent in the dental department of a general hospital approved by the University. 4. *A.* In addition to the Licence in Dental Surgery the candidate must produce evidence that he has attended the courses required by medical students of the University in the following subjects and passed the Examinations held in the same for Medical and Surgical Degrees: (*a*) Elementary Biology and Organic Chemistry, (*b*) Anatomy and Practical Anatomy, and (*c*) Physiology and Practical Physiology. *B.* That he has passed the class examinations in: (*d*) One Special Course of Lectures on Medicine, (*e*) One Special Course of Lectures on Surgery, and (*f*) Pathology and Bacteriology. *C.* That he has attended courses and passed the class examinations in: (*g*) Dental Histology and Patho-Histology, (*h*) Comparative Dental Anatomy, and (*k*) Dental Surgery and Prosthetic Dentistry. *D.* That he has received instruction in the Clinical Examination of living cases at the dental department of a general hospital for a period of not less than six months. 5. The Final Examination will deal with the subjects in Classes *C* and *D*. 6. On the expiration of 12 months from the date of passing the Examination for the Degree of Bachelor of Dental Surgery, the candidate will be eligible for that of Master of Dental Surgery. 7. For this degree candidates will be required to submit a thesis containing original work, and investigations in some subject connected with Dentistry, which theses shall be submitted to examiners to be nominated by the Dental Advisory Board.

UNIVERSITY OF BRISTOL.—Candidates for the degree of Bachelor of Dental Surgery must be not less than 21 years of age and shall have pursued the courses prescribed by University regulations during not less than four years after passing the first examination in the subjects of Chemistry and Physics, of which three shall have been passed in the University. All candidates for the degree of B.D.S. are required to satisfy the examiners in the several subjects of four examinations. The First Examination: The subjects are Chemistry, Physics, and Biology, and the curriculum extends over one year.* The Third Examination: The subjects are Dental Mechanics, Dental Metallurgy, and Dental Materia Medica, and the candidate shall produce evidence of having served for three years an approved pupilage in Dental Mechanics.† The Second Examination: The subjects are Anatomy, Physiology, and Histology, Dental Anatomy, and Dental Histology. The Final Examination: The subjects are Medicine and Surgery, Dental Surgery (including Prosthetics), Operative Dental Surgery, and Dental Bacteriology. Degree of Master of Dental Surgery: Candidates shall be Bachelors of the University, shall present a Dissertation on some subject of Dental Surgery to be approved by the Examiners, and pass an examination in Dental Surgery. Diploma in Dental Surgery: Candidates need not be undergraduates, but shall have passed an entrance examination satisfactory to the University before being admitted

* Candidates who have passed the Higher School Certificate approved by the Board of Education in these subjects will not be required to sit for the first examination for either the B.D.S. or the L.D.S., and will be regarded as having completed one year of study.

† This pupilage must be taken either in the University laboratories or those of some institution recognised for the purpose by the University.

to any professional examination; the curriculum extends over four years from the date of passing a preliminary science examination in Chemistry and Physics. A three years' pupilage in Mechanical Dentistry is required† and four examinations must be passed, the subjects of which agree with those of the B.D.S. Medicine is not required for the Final Examination. Candidates who are already registered medical practitioners shall be further exempted from study and examination in Physics and Chemistry, Anatomy, Physiology and Histology, Medicine, and General Surgery.

UNIVERSITY OF DURHAM.—Every Dental student must, at the commencement of his studentship, be registered in the manner and under the conditions prescribed for Medical students.

Licence in Dental Surgery: The first examination consists of three parts, which may be passed separately. Part 1, Organic Chemistry. Part 2, Biology. Part 3, Theoretical Dental Mechanics, Dental Metallurgy (Theoretical and Practical). Second Examination: Anatomy, Physiology (including Biochemistry and Biophysics), Dental Anatomy and Dental Histology. Third Examination: Pathology and Bacteriology, Practical Dental Mechanics, Dental Materia Medica and Therapeutics. Final Examination: Medicine, Surgery, Dental Surgery and Pathology, Orthodontics, Operative Dental Surgery, and Dental Prosthetics, and Anæsthetics.

A candidate before presenting himself for examination is required to furnish certificates of instruction in the required subjects, attended after registration as a dental student at recognised Colleges or Schools.

Degree of Bachelor of Dental Surgery (B.D.S.).—(*a*) For students taking their complete course of instruction in the University. Such students must pass the same matriculation tests as medical students, and the same pre-registration examination in Inorganic Chemistry and Physics. After registration students must spend five years in the University, on attendance on such subjects as Senate, on the recommendation of the Board of the Faculty of Medicine, may from time to time determine. They must attend the practice of the Newcastle-upon-Tyne Dental Hospital for not less than two and a half years. Six months of this time must be devoted to the study of the higher branches of dental science. There are four examinations.

The subjects of the *first* examination are Biology, Organic Chemistry, and Dental Mechanics and Metallurgy.

The subjects of the *second* examination are Anatomy, Physiology, Dental Anatomy and Histology.

The subjects of the *third* examination are Pathology and Bacteriology, Dental Materia Medica and Therapeutics, and Practical Dental Mechanics.

The subjects of the *final* examination are Medicine, Surgery, Dental Surgery and Pathology, and Orthodontia and Operative Dental Surgery. In this subject knowledge of a much higher standard, and more advanced practical work, is required than for the Licence in Dental Surgery.

(*b*) For candidates possessing a Licence in Dental Surgery of a British University. Candidates must study for at least one year in the University. During such year they must (*a*) attend a course of instruction in Pathology and Bacteriology, and (*b*) spend at least six months in the Newcastle-upon-Tyne Dental Hospital in the study and practice of the higher branches of dental science. They must also pass the third and final examinations for the degree of Bachelor of Dental Surgery.

Degree of Master of Dental Surgery (M.D.S.).—Every candidate for this degree must be a Bachelor of Dental Surgery of the University of not less than two years' standing, and present an essay embodying original work and research in some subject connected with dentistry. They must also perform to the satisfaction of the examiners a piece of special dental work demanding a high degree of skill and experience.

The examinations are held concurrently with the medical examinations, and the fees payable by candidates are as follow:—For the Licence in Dental Surgery: First, Second, and Third Examinations, each £3 10*s.*; Final Examination, £5; for Licence, £3; total, £18 10*s.* For the Bachelor of Dental Surgery: First, Second, and Third Examinations, each £5; Final Examination, £8; for the degree, £6 16*s.*; total, £29 16*s.* For the Master in Dental Surgery: examination, £5; degree fee, £6 6*s.* The practical examinations in dentistry are conducted at the Newcastle Dental Hospital.

UNIVERSITY OF LEEDS.—The degrees in Dental Surgery are Bachelor of Dental Surgery (B.Ch.D.) and Master of Dental Surgery (M.Ch.D.). All candidates for the degree of Bachelor of Dental Surgery shall be required to have passed the Matriculation Examination, to have pursued thereafter approved courses of study for not less than five academic years, two of such years at least having been passed in the University subsequently to the date of passing Parts I. and II. of the First Examination, and to have completed such period of pupilage or hospital attendance, or both, as may be prescribed by the regulations of the University. No candidate will be admitted to the degree who has not attained the age of 21 years on the day of graduation. The Diploma in Dental Surgery (L.D.S.) is awarded to successful candidates after attendance on approved courses extending over not less than four years. The curriculum for the Diploma now includes the study of Biology for the First Examination. The classes in the Department of Dentistry begin on Oct. 1st. The instruction in the Preliminary subjects of Chemistry, Physics, and Biology are given in the main buildings of the University. The classes in the other subjects and the systematic courses in Dental subjects are held in the School of Medicine of the University in Thoresby-place. The clinical instruction is given in the Dental Hospital at the Leeds General Infirmary. Applications for the prospectus should be made to the Academic Sub-Dean of the Faculty of Medicine.

UNIVERSITY OF LIVERPOOL.—The University grants a Licence in Dental Surgery (L.D.S.) and degrees in Dental Surgery (B.D.S. and M.D.S.). The management of the curriculum (lectures, practical and clinical) is in the hands of the University Board of Dental Studies. The courses of systematic instruction are given in the main University buildings, and those in Dental Mechanics, Operative Dental Surgery, &c., are given in the University School Extension (opened 1922), adjoining the Dental Hospital, the laboratory of which is in charge of a skilled dental mechanic under the supervision of the Director of Dental Education. The clinical instruction is given in the Dental Hospital. Students can take the whole curriculum, including Dental Mechanics, at the University School of Dental Surgery. The times of the lectures at the University are arranged to meet the convenience of students, thus allowing the maximum time for attendance upon Dental Hospital practice. Fees: The fees for the complete courses, including Pupilage and Hospital Practice, are as follows: Degree of B.D.S., £250; M.D.S. (by research, £32; by examination, £27); L.D.S. (Liverpool), £198. Further information may be had from the Director of Dental Education, Prof. W. H. Gilmour.

In order to be admitted to the Bachelor's Degree in Dental Surgery a student must normally, after registration as an Internal Student, have—(1) Attended prescribed courses of study for five years at one or more Schools of the University. (2) Passed the following examinations:—(*a*) First Examination: *Part A:* (i.) Chemistry, (ii.) Physics, (iii.) Biology (Zoology and Botany); *Part B:* (iv.) Dental Metallurgy. Candidates may take Parts A and B separately. (*b*) Second Examination: *Part A* (i.) Anatomy, (ii.) Dental Anatomy, Dental Physiology, and Dental Histology; *Part B:* (iii.) Physiology; *Part C:* (iv.) Dental Mechanics,

Candidates may take Part A separately but must take Parts B and C together. Third Examination: *Part A:* (i.) Elementary Bacteriology, (ii.) Clinical Chemistry, (iii.) General Pathology; *Part B:* (iv.) Dental Materia Medica, (v.) Dental Mechanics and Dental Prosthetics. Candidates may take Parts A and B separately. Students who have received not less than two years' instruction in Dental Mechanics previous to Nov. 30th, 1922, with a Dentist registered under the provisions of the Dentists Act (1921) and who have passed a recognised examination in preliminary education may, on application, be registered as students for the Licence under certain conditions.

UNIVERSITY OF LONDON.—The curriculum for the degree of Bachelor of Dental Surgery covers five years from Matriculation. The Regulations for Internal and External Students may be obtained post-free on application to the Academic Registrar, at the University.

UNIVERSITY OF MANCHESTER.—In the University of Manchester the Dental Department forms an integral part of the Faculty of Medicine. This contains a series of laboratories, lecture rooms, and museums which will bear comparison with those of any other school in the kingdom, and the fullest opportunities for study are offered to students preparing for any of the professional examinations. Instruction adapted to the requirements of students preparing for the B.D.S. Degree and the Dental Diplomas of the University, the Royal College of Surgeons of England, and of other licensing bodies is given throughout the session both at the University and at the Dental Hospital of Manchester adjoining the University. The required general hospital practice is taken at the Manchester Royal Infirmary. Women students are admitted to the classes in the Dental Department, and for them common rooms are provided. The composition fee for candidates for the University degree of Bachelor of Dental Surgery is 94½ guineas, payable in three equal yearly instalments. The composition fee for candidates for the University Diploma in Dentistry is 84½ guineas, payable in three equal yearly instalments. The composition fee for candidates for the L.D.S. of England is 94½ guineas, payable in three equal yearly instalments. Students who have already served their apprenticeship with a private practitioner, and who propose to complete the final portion of their attendance at the University and at an approved dental hospital, will be required to pay the composition fee in two equal instalments at the commencement of the first and second years of studentship. The composition fee does not include the hospital fees, the examination fees, nor the fee for the conferment of the degree or the diploma.

UNIVERSITY OF SHEFFIELD.—*Degree of Bachelor of Dental Surgery.*—A candidate must have attained the age of 22 years on the day of graduation and have pursued the courses of study required by the University regulations during a period of not less than five and a half years subsequent to matriculation and the passing of the further examination in Chemistry and Physics, three of such years at least having been passed in the University, one at least being subsequent to the passing of the First Examination.

First Examination: The subject of the examination is Biology. Candidates must have attended a course of instruction for one year after matriculation and the passing of the further examination in Chemistry and Physics. Second Examination: The subjects of the examination are Anatomy, Physiology, Dental Anatomy, Physiology and Histology; Dental Mechanics, Dental Metallurgy. Final Examination: The subjects of the examination are: Part I., Pathology and Bacteriology; Part II., Medicine and Surgery, Dental Surgery, including Materia Medica and Therapeutics. Candidates for Part II. must have completed five and a half years of professional study.

Degree of Master of Dental Surgery.—Candidates must have passed the examination for the degree of B.D.S. at least one year previously and before admission to the examination must have held for not less than six months a dental appointment in a hospital affording full opportunity for the study of Dental Surgery. Candidates shall not be required to but may present a thesis embodying observations in some subject approved by the Faculty and a candidate whose thesis is of exceptional merit may be exempted from any part of the examination.

Diploma of Licentiate in Dental Surgery.—A candidate must have attained the age of 21 years on the day upon which he is to receive the diploma, and have pursued the courses of study required by the University regulations during a period of not less than four years subsequently to passing the preliminary examination and the passing of the further examination in Chemistry and Physics. Two years must be passed in the University, one at least being subsequent to the passing of the First Examination.

First Examination: The subject of the examination is Biology. Candidates must have attended a course of instruction for one year. Second Examination: The subjects of the examination are Anatomy and Physiology, Dental Anatomy and Physiology, Dental Mechanics, Dental Metallurgy. Final Examination: The subjects of the examination are: Part I., Pathology and Bacteriology; Part II., Medicine and Surgery, Dental Surgery, including Materia Medica and Therapeutics. Candidates for Part II. must have completed the fourth year of professional study.

The Dental Composition Fees are as follows:—

For B.D.S.: 1st and 3rd years, £75; 2nd, 4th, and 5th years, £25.

For L.D.S.: 1st and 2nd years, £75; 3rd and 4th years, £25.

QUEEN'S UNIVERSITY OF BELFAST.—The following degrees and diplomas are now conferred: Licentiate in Dental Surgery, Bachelor of Dental Surgery, and Master of Dental Surgery. Lecturers have been appointed in Dental Surgery, Dental Mechanics, Dental Metallurgy and Materia Medica, and Orthodontia.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED SEPT. 18TH, 1926.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 120 (last week 106); scarlet fever, 1392; diphtheria, 973; enteric fever, 71; pneumonia, 409; puerperal fever, 45; cerebro-spinal fever, 4; acute poliomyelitis, 75; acute polio-encephalitis, 2; encephalitis lethargica, 38; continued fever, 3; dysentery, 28; ophthalmia neonatorum, 95. There were no cases of cholera, plague, or typhus fever notified during the week.

The notifications of poliomyelitis, which are 22 more than last week, come from many parts of the country, with special incidence in the county of Essex, 7; Hertford, 4; Kent, 5; Leicester, 31 (16 of these from Leicester C.B.); and Warwick, 4.

Of the 120 cases of small-pox, 96 were reported from the counties of Northumberland (10) and Durham (86). In Gateshead 19 cases (some of them since the issue of this return) are said to owe their origin to a family in which the children, although ill, were not medically examined and returned to school in an infectious condition.

Deaths.—In the aggregate of great towns including London, there were no deaths from small-pox, 5 (2) from enteric fever, 1 (0) from measles, 2 (1) from scarlet fever, 26 (1) from whooping-cough, 24 (2) from diphtheria, 217 (39) from diarrhœa and enteritis under 2 years, and 19 (4) from influenza. The figures in parentheses are those for London itself. A week with only a single death from measles is noteworthy.

Messrs. Allen and Unwin announce the forthcoming publication of "Fundamentals of School Health," by Dr. James Kerr.

THE LANCET.

LONDON: SATURDAY, OCTOBER 2, 1926.

BILIARY PHYSIOLOGY AND PATHOLOGY.

THE departments of medicine are no exception to DANTE GABRIEL ROSSETTI'S dictum

> ". . . . Till the world shall burn,
> It seems that all things take their turn;"

the nervous, respiratory, cardiovascular, and other systems have had their day of special popularity, and their intensive investigation, of course, continues. More recently the alimentary canal and its appendages, which for a time were being peacefully or otherwise penetrated by the surgeon, have been the subject of more extensive biochemical and experimental research, such as the fractional test-meals initiated by REHFUSS, of Philadelphia, and introduced into this country by Dr. ARTHUR HURST; the tests for hepatic efficiency (L. G. ROWNTREE, S. M. ROSENTHAL, G. H. WHIPPLE, H. MACLEAN and DE WESSELOW, HIJAMS VAN DEN BERGH), and the brilliant researches on biliary secretion of PEYTON ROUS and his collaborators at the Rockefeller Institute, New York; and of R. H. T. MANN and his team at the Mayo Clinic, Rochester. A sign of the times is found in the repeated discussions at the Medical Section of the British Medical Association on hepatic and biliary disease in alternate years since 1922; Prof. D. P. D. WILKIE, who took part in the recent discussion at Nottingham on Some Recent Developments in our Knowledge of the Biliary Tract (THE LANCET, July 31st, p. 234), opened by a fellow professor of surgery, EVARTS A. GRAHAM, of Washington University, St. Louis, U.S.A., now publishes (p. 689) an address delivered at St. Mary's Hospital Medical School on May 27th last on the Functions of the Biliary Passages in Relation to their Pathology. In this lecture he reviews the recent additions to our knowledge and from a wide practical experience provides thoughtful suggestions as to their bearing on the clinical manifestations of biliary disease.

The detection of the early stages of disease—that is, of a departure from normal function—necessitates an accurate knowledge of the healthy organism, and with regard to the physiology of the biliary tract there is not yet complete agreement on some points; for instance, there is considerable difference of opinion on the question whether or not the gall-bladder contracts; Prof. WILKIE speaks of its rhythmic contractions as a factor in assisting the concentration of the contained bile, and MCMASTER and ELMAN, of the Rockefeller Institute, in recent papers have proved experimentally that the gall-bladder of the unanæsthetised dog responds to the stimulation exerted by food with fairly vigorous contractions. If the gall-bladder does not possess the power of muscular contraction, as EVARTS GRAHAM and others have argued on the basis of direct observation of gall-bladders in many operations on man and in experiments under anæsthesia, while the bile-ducts are practically devoid of smooth muscle, the question arises as to the mechanism by which biliary colic—perhaps the most severe pain that human flesh is heir to—is produced. In addition to a sphincter-like collection of muscular fibres at the neck of the gall-bladder, as shown in Fig. III. (see plate) there is the well-known Oddi's sphincter at the lower end of the common bile-duct, which is tonically contracted except when bile is passing into the duodenum; from the available evidence Prof. WILKIE makes some suggestions as to the importance and results of persistent spasm of Oddi's sphincter, and mentions pain, though not frank biliary colic in so many words, as a result of spasm of this sphincter. Another result is biliary stasis, spoken of, therefore, as hypertonic stasis; and the influence of hypersensitiveness of the sphincter associated with the hypercholesterolæmia of pregnancy and arteriosclerosis in causing biliary stasis and so disposing to infection, cholecystitis, and gall-stones, is a very interesting possibility; it is suggested that the excess of cholesterol in the blood is the disposing factor to the hypervagotonia and so to persistent spasm of Oddi's sphincter. As spasm of the sphincter may cause biliary stasis and dilatation of the gall-bladder, it seems reasonable to believe that it may be responsible for the rare condition of cystic dilatation of the extrahepatic bile-ducts, and Prof. WILKIE compares the underlying want of neuromuscular coördination which leads to failure in relaxation of Oddi's sphincter, or achalazia, with that responsible for cardiaspasm, idiopathic dilatation of the colon, congenital pyloric stenosis, and some forms of hydronephrosis. He also suggests that persistent spasm of Oddi's sphincter is the cause of the pains and transient jaundice occasionally seen after cholecystectomy, which naturally suggest an overlooked stone in the common duct, but in which a second operation reveals nothing save a dilated common bile-duct. This possibility of achalazia of the lower end of the common bile-duct after removal of the gall-bladder recalls Meltzer's law of contrary innervation of the gall-bladder and Oddi's sphincter—namely, that Oddi's sphincter remains in tonic contraction until the gall-bladder contracts, when it relaxes. It might, indeed, be logically imagined that after removal of the gall-bladder Oddi's sphincter would fail to relax; the reverse, however, usually occurs, for at first at any rate, and sometimes perpetually, there is biliary incompetence and the bile flows continuously into the duodenum. It would be interesting to know what factors govern the behaviour of Oddi's sphincter after cholecystectomy. The occasional onset of acute hæmorrhagic pancreatitis in biliary disease is well established; in 1901 HALSTED and OPIE put forward the attractive explanation that this accident was due to retrojection of bile into Wirsung's duct of the pancreas as a result of impaction of a small calculus in the biliary papilla; the presence of a gall-stone in the biliary papilla is by no means constant in acute hæmorrhagic pancreatitis, and ARCHIBALD'S suggestion, modified by MANN and GIORDANO, of spasm of the terminal or papillary portion of Oddi's sphincter, which would throw the biliary and pancreatic ducts into one, is quoted by Prof. WILKIE.

In addition to biliary stasis due to spasm of Oddi's sphincter there is the hypotonic gall-bladder met with in asthenic visceroptosis and, indeed, part of that condition; the symptoms suggest gall-bladder disease, but laparotomy shows a flabby dilated gall-bladder without calculi and little if any evidence of inflammation; as this negative finding may result in nothing further being done, it is important to note that removal of the gall-bladder has been followed by freedom from symptoms. It is generally agreed that the gall-bladder, unlike the urinary bladder, never becomes entirely empty; in fact the only occasion on which Prof. WILKIE has encountered an empty gall-bladder was in a case with obstruction of both hepatic ducts at their junction to form the common hepatic duct (Fig. IV.). In the past the occurrence of "white"

bile in the dilated ducts of some jaundiced patients with obstruction of the bile-ducts was ascribed to failure of the liver to secrete bile-pigment, and, indeed, the explanation why in some instances, as in malignant disease of the head of the pancreas, the bile was tarry and deep in colour, whereas in others, such as gall-stone obstruction, it was white, has only recently been provided by PEYTON ROUS and MCMASTER. They find that it depends on the condition of the gall-bladder, a healthy one concentrating the bile to one-tenth of its volume, whereas a diseased gall-bladder cannot do so; this is illustrated on the accompanying coloured plate, and it is pointed out that the condition of the bile can be shown by cholecystography, the dark concentrated bile casting a definite shadow due to the contained sodium tetraiodophenolphthalein, whereas the white bile fails to stop the X rays. Experiments on cats, however, in Prof. WILKIE'S hands have shown that there is a limit to this concentration and that ligature of the common duct may be followed by distension of the whole biliary system, including the healthy gall-bladder, with white bile; this observation raises the obvious question as to the explanation of the divergence from ROUS and MCMASTER'S results. A clear account summarising the present state of knowledge about the aseptic formation of the cholesterol "solitaire" and the septic formation of multiple calculi is given, and the way in which an aseptic cholesterol calculus, which often remains "silent" for years, may nevertheless obstruct the exist from the gall-bladder, favour infection and the formation of "a combination" calculus and numerous secondary septic calculi, is illustrated (Fig. VI.). This process is of practical importance, for in acute obstructive cholecystitis the surgeon should not be content to evacuate pus and numerous small calculi, but must also look for and remove the ovoid combination stone from the neck of the gall-bladder or the cystic duct.

SCHOOL CLINICS.

TOWARDS the end of last century the public conscience was more or less awakened to the unsatisfactory condition of elementary school-children, and since that time, as Sir HUMPHRY ROLLESTON points out in the address which we publish on page 687, there has been a remarkable extension of medical activity. By the Education Act of 1907 local authorities were obliged to inspect their school population, and by that of 1918 they became responsible for the treatment of defects as well. The earlier clinics were no more than clearing-houses, the children being directed to the appropriate places for their treatment; but as the cases were followed up it soon became evident that facilities for dealing with common conditions were often quite inadequate. The available agencies for treatment were private practitioners, provident dispensaries, voluntary hospitals, and Poor-law institutions, but without reorganisation these could not possibly cope with the number and types of defect which inspection revealed. Many authorities evolved far-reaching schemes, and by 1910 the London County Council had made arrangements with seven hospitals for treating 12,700 children. Later on, with the help of local committees of practitioners, it became possible to start a series of treatment centres, whilst still making full use of hospital resources, and in 1925 the number of children treated in London was nearly a quarter of a million.

The new clinic at Birmingham, whilst important, is only one of many similar institutions being opened all over the country, and clearly these are going to be of very great importance in preventive medicine. The public health demands the care of children from conception to maturity; they have to be thought of in relation to heredity, home surroundings, school curriculum, school environment, hygiene, and diet. These considerations are ever behind maternity and child welfare schemes, school medical work, factory inspection, and panel or hospital practice—all of which are rapidly being coördinated to serve the one end without overlapping. As now constituted, school clinics meet the need for treatment and secure it for defects and diseases hitherto largely neglected. Regularity of attendance can be maintained, and there is increasing coöperation with local practitioners. So successful have their efforts been that "the modern tendency," to quote a recent book on school hygiene,[1] "is to increase the number of these centres rather than extend the scope of hospital work, experience showing that the treatment centres possess greater elasticity than the hospital and lend themselves in some respects more readily to the needs of the education authority."

More and more the clinic forms a link between the child, its home, its school, and the medical officer. The presence of parents and the visits of nurses and health visitors to the children's homes make it a social and educational agency of great value. The requirements of particular districts must needs vary. In the country it may be hard to arrange for the care of scattered populations, but there is scarcely any well-planned scheme of treatment that will not fully repay the money spent on it, and in some areas difficulties can be met by fitting up motor wagons for dental, aural, or ophthalmic work. At Nottingham an institution of ambitious design has recently been opened under the direction of Dr. E. M. WYCHE, and here, besides the usual facilities found in large clinics, there is an operating theatre for tonsils and adenoids, with two wards, and general and private rooms for a staff of clerks and ample accommodation for nurses and caretakers. The new building opened by Sir HUMPHRY ROLLESTON at Birmingham, besides having admirable facilities for medical, dental, and special treatment, is also to be used for lantern and cinematograph lectures and for public meetings designed to quicken interest in preventive hygiene. Such public interest is exceedingly desirable, and, thanks to the work done by medical officers, it is steadily being aroused.

RIVERS POLLUTION.

AT the end of August the Standing Committee on River Pollution presented its third report to the Minister of Agriculture and Fisheries. It was a gloomy document. The Committee stated that the deeper it delved into the problem of pollution the more complex that problem appeared. After commenting on the general difficulty of reconciling the various interests of industry, water-supply, water power, fisheries, and local amenities, the report deplored the lack of scientific knowledge necessary to devise methods of dealing with particular effluents. Beet sugar manufacture, it appears, has introduced a fresh danger. This new industry requires large quantities of water; factories are consequently erected close to streams, and the factory effluents cause injury to stream life either by direct poisoning or by developing a mass of sewage fungus or by both means. The Committee recalled the recommendation of the Royal Commission on Sewage Disposal, advocating the creation of some central authority to hold the scales evenly between the

[1] Crowley's Hygiene of School Life, sixth edition, p. 186.

various interests involved and the establishment under such authority of a sufficient technical staff to find answers to the scientific questions which arise. The Committee's report solemnly warned the country that the longer it postpones a comprehensive effort to tackle the problems of pollution the more difficult and expensive will be the task and the greater the risk of failure. The same topic occupied the attention of the National Association of Fishery Boards at its annual meeting this year when the Ministry of Agriculture and Fisheries was asked for any available information. The Ministry's representative discussed the possibility of a general survey of the rivers of the country, but admitted that rivers were being destroyed by pollution meanwhile. He was unable to report any progress in the purification of a number of specified effluents; he announced that experiments proved that all road dressings containing tar were injurious to fish, and he spoke a little vaguely of the need of creating such a public opinion that something would have to be done. Of efforts in this direction much may be hoped of the recently founded Pure Rivers Society, which intends to educate the public, to collect practical, scientific, and legal information, and to band together all the different classes of the community which suffer from river pollution. The Society laments the official admission that pollution, instead of being checked, is making progress, and it criticises the weakness of the law.

The inadequacy of the law, however, seems due not so much to the failure of Parliament and the judges to give a remedy as to the difficulty of stimulating the proper persons and bodies to ask that the remedy be applied. Quite apart from any statutory prohibition, all interference with water flowing in a defined channel which injures its purity or volume is in England a nuisance at common law. Aggrieved persons can obtain damages and an injunction to restrain continuance; action can also be taken on behalf of the public, and, as pollution to the danger of health is an indictable nuisance, the Attorney-General can be moved to institute a prosecution. But although the law-courts have readily upheld the common law right to unpolluted water, the right could be defeated formerly by Act of Parliament or prescription. If the pollution had gone on long enough the offender acquired a prescriptive right to continue his offence. The acquisition of this prescriptive right, to which we shall presently return, carried with it no right to increase the pollution; but, with the gradual increase of populations and of manufacturing activity, it proved a serious limitation on the right to pure water. Fifty years ago Parliament intervened. The Public Health Act of 1875 made it the duty of local authorities to protect water-courses from sewage pollution. In the following year came the first Rivers Pollution Prevention Act. The 1876 Act, which piously recites that it was "expedient to make further provision for the prevention of the pollution of rivers and in particular to prevent the establishment of new sources of pollution," began by making it an offence to put solid refuse, waste, or any putrid solid matter into a stream so as to interfere with its due flow or to pollute its waters. It went on to prohibit the drainage into streams of solid or liquid sewage matter and of poisonous, noxious, or polluting liquids from factories or mines. But just as the railway and steamship interests have fought recently for exemption from the proposed legislation as to smoke abatement, so in 1876 the mining and manufacturing interests procured important limitations on the right to institute proceedings in respect of river pollution. In so far as it was left to sanitary authorities to take action, these bodies often combined the dual rôles of poacher and gamekeeper, and were themselves the worst offenders. In 1888, when county councils were first formed, the county council was authorised to enforce the Rivers Pollution Act. In 1893 a second Rivers Pollution Prevention Act added that where any sewage matter falls, flows, or is carried into a stream after passing through a channel which is vested in a sanitary authority, the sanitary authority shall be "deemed to knowingly permit the sewage matter so to fall, flow, or be carried." More recently the Salmon and Freshwater Fisheries Act of 1923 authorised fishery boards to take action to enforce the Rivers Pollution Acts and to aid any person or body in this connexion. Though Section 8 was retrograde in favouring existing pollution and in limiting the general right to prosecute cases of discharge of noxious trade effluents, the 1923 Act repeated previous prohibitions of the poisoning of fishing rivers. But this sequence of statutes has failed to effect its purpose. Litigation costs money, and vested interests are strong; neither individuals nor groups of ratepayers are ready to fight the large and wealthy corporations which are often the offenders. On the whole the landowner makes the best plaintiff because the law-courts have always respected his common law right to pure water; the local authorities have more scope when it is a question of enforcing statutory prohibitions. A few years ago a most hopeful success was won when the Court of Chancery allowed the common law right to be reinforced by the statutory prohibition. This was the decision in Hulley *v.* Silversprings Bleaching Co., [1922] 2 Ch. 268. A riparian owner had brought an action against a bleaching and dyeing company upstream to restrain it from continuing to pollute his water. The main defence was a plea of a prescriptive right to pollute, enjoyed for 20 years as of right; alternatively a right was alleged by virtue of a lost grant. Mr. Justice EVE upon this point declared that the prescriptive easement claimed was contrary to the Rivers Pollution Prevention Act of 1876, Section 4 of which made this pollution a criminal offence. "A lost grant cannot be presumed where such a grant would have been in contravention of a statute; and, as title by prescription is founded upon the presumption of a grant, if no grant could lawfully have been made, no presumption of the kind can arise and the defendants' claim must fail." This important decision went far to kill the defence of prescriptive right, and it is surprising that it has not been more freely turned to account.

We noted last year that in his annual report to the Metropolitan Water Board Sir ALEXANDER HOUSTON still regarded the Thames as a potential salmon river. It is well aerated at Hampton at all seasons of the year; only in the lower reaches is there the deficiency of oxygen which is fatal to fish life. Sir ALEXANDER HOUSTON's report for the present year tells something of the romance of the New River, a 300-year old stream gently flowing into the heart of London, for many miles in an uncovered channel, its water (save for chlorination) almost untreated and used to its utmost drop for drinking. Sir HUGH MIDDLETON, the famous author of this remarkable enterprise, found at first—as is stated in the charter granted to the New River Company in 1619—"the success thereof doubtful and the oppositions made against it very strong." Some of his persistence is required to-day. Two famous southern rivers, the Test and the Kennet, have been successfully protected from fouling, but it has been said that almost all the other rivers in Great Britain are illegally polluted. The fisherman's is not the only point of view, of course, but the ideal of a tidal Thames, purified to allow the ascent of the salmon and the descent of the smolts is one which not only fishermen hope to see realised within their lifetime. The state of the law must be investigated and improved. Public opinion must be organised against the contamination of rivers so that prosecutions can be undertaken with a prospect of substantial penalties, and so that industrial concerns can be driven to find means of purifying their noxious effluents. Important companies have, in deference to popular feeling, abandoned the desecration of local amenities by advertisements which offend the eye. They must be induced to feel the fouling of streams and rivers a far more serious offence. Meanwhile the Ministries of Health and of Fisheries must somehow mobilise research workers to find practical and not too expensive methods of treating effluents which at present defy scientific purification. Even in the present state of scientific knowledge there is constant pollution because towns neglect or misunderstand the expensive

and elaborate provision which their sewage works already contain. The Royal Commission on Sewage Disposal, whose recommendations seem to have been entirely ignored, reported that the purification of trade effluents by the local authority is practicable "in the great majority of cases."

Annotations.

"Ne quid nimis."

SIR JOHN MACALISTER.

Sir John MacAlister, alike by his strenuous work and his sympathetic personality, so impressed himself upon the regard and affection of a very large range of medical men that it has been a natural idea on the part of his family to compile for private issue a small volume in his memory. The volume is not, and is not intended to be, a biography, though the history of his life emerges from the large assortment of obituary notices published in the general and medical press and the library periodicals which form the bulk of the compilation. These notices are supplemented by a collection of resolutions from various public, medical, and literary associations, and by extracts, signed and unsigned, from numerous letters of sympathy of a personal character. The little volume, which contains several excellent portraits, will fill exactly the purpose which the family had in mind. It is a tribute from all sorts and conditions of men who were brought into contact with John MacAlister's work, leisure, and aspirations which his friends will be glad to possess.

SUBMAXILLARY SALIVARY CALCULUS.

THE removal of six faceted stones from the submaxillary gland, recorded by Mr. W. I. Daggett in our last issue, is an interesting addition to the literature of salivary calculi. This form of stone, which Hamilton Bailey aptly calls[1] "the Cinderella of the stones to which human secretory and excretory mechanisms are heir," is not uncommon, though the relatively minor disabilities to which it gives rise in comparison with other varieties of calculus have detracted from its surgical importance. Yet both in regard to size and to the remarkable way in which the six stones fitted one another Mr. Daggett's case is unusual. By a striking coincidence Sir James Berry, in the *British Journal of Surgery* for April, has recorded a case of submaxillary calculus which had undergone spontaneous fracture into three pieces with eburnation of the broken surfaces. The question naturally arises whether this case might also be looked upon as one of three calculi with faceted surfaces, or, conversely, whether Mr. Daggett's example might not be one of spontaneous fracture with eburnation of the surfaces. The answer is not easy. If it is difficult to imagine spontaneous fracture of a calculus in the gland, unless there was some definite history of injury which might render it possible, it is also difficult to envisage the conditions which could lead to the formation of several stones in different parts of the gland, with intervening gland tissue which gradually became destroyed, as Mr. Daggett suggests. Until we know the actual cause of the formation of calculus in the salivary duct or gland such aberrations of the usual type of stone as this must remain pathological curiosities. It is noteworthy that in Mr. Daggett's case there was a history of 18 years' development, while in Sir James Berry's case there was evidence to show that the condition had been developing over a period of 29 years. The absence of symptoms in the latter case is in striking contrast to the former in which the periodic swelling and pain with inflammatory changes were in accordance with the text-book description of the condition.

[1] Brit. Jour. Surg., October, 1924.

TRYPARSAMIDE IN THE TREATMENT OF NEUROSYPHILIS.

THE new arsenical compound tryparsamide has now been tried for the treatment of syphilis, and particularly neurosyphilis, in many countries. Observations have been published by workers in France, Germany, and the United States, and we print this week a detailed report by Dr. J. D. Silverston to the Medical Research Council of his experiences with the new treatment at the Whittingham Mental Hospital, Preston, and an abstract of a report by Dr. M. Brown and Dr. A. R. Martin to the Glasgow District Board of Control. Extensive trials made at the Mayo Clinic, Rochester, U.S.A., were put on record by J. H. Stokes and L. F. X. Wilhelm two years ago, and P. A. O'Leary and Becker, who continued their work, were able in March last to include observations on 207 patients, of whom 113 had received at least two courses of tryparsamide each consisting of ten injections. In their 50 cases of early general paralysis, treated with the new drug with the addition of mercury or bismuth, 12 per cent. showed definite remissions —a figure, they point out, not appreciably higher than the proportion of spontaneous remissions; 66 per cent. of their patients were better in one or more ways, some of them only subjectively. Improvement in the state of the blood and cerebro-spinal fluid as judged by specific reactions occurred in 32 per cent., and in 20 per cent. the spinal fluid reactions became normal. These serological effects were more marked the more prolonged the treatment, and in a number of cases tryparsamide produced definite serological improvement when other preparations had failed to do so. In fact, it seemed that tryparsamide was beneficial chiefly as a "finishing-off" remedy after courses of treatment with other drugs, for when it was given alone to patients who had had no previous antisyphilitic treatment only five out of 35 showed any response. O'Leary and Becker group in a separate class 15 cases of G.P.I. without paralytic symptoms; in one of these patients the cerebro-spinal fluid became negative to specific tests, but in the others there was little improvement except such as resulted from the general tonic effect of the drug. In cases of tabes dorsalis the results were disappointing; the promise of relief in gastric crises held out by certain observations of Stokes and Wilhelm was not fulfilled. In 14 cases of disseminated sclerosis and of combined sclerosis the new treatment was without benefit. Dr. Silverston has not so many cases to record, but his observations include patients in whom tryparsamide was used as an adjunct to treatment by malaria, and he is able to compare groups treated by tryparsamide without and with fever treatment. The former comprised eight cases of G.P.I., and of these two, which were early cases, showed complete remission. In one of them after 20 injections the Wassermann reaction became negative in the blood and cerebro-spinal fluid and the colloidal gold reaction became normal, but in the other the Wassermann reaction remained positive in both fluids and the colloidal gold reaction was little changed. Of the seven cases treated with tryparsamide after malaria two again were early cases, and both showed clinically complete remission of the disease, while one more advanced case improved. Neither the clinical nor the serological results are considered by Dr. Silverston any better than those obtained by malaria alone. With more advanced cases of the disease the treatment presented difficulties and was disappointing. Of the 13 cases of neurosyphilis treated at the Gartloch Mental Hospital by Dr. Brown and Dr. Martin under laboratory control with a full course of tryparsamide alone, all except two benefited in some degree; five steady and useful workers were able to return to their homes. Three other advanced cases died during the treatment but no toxic disturbances were noted and gain in weight was the rule. At the Pretoria Mental Hospital, Dr. A. Pijper and Dr. E. D. Russell have found [1] a combination of

[1] South African Medical Record, April 24th, 1926.

tryparsamide and mercuric salicylate effective in cases of early paresis and tabes.

The use of tryparsamide is not free from untoward effects, to which several writers have called attention, the most serious of these being visual impairment, transient or permanent. It is often difficult, however, to decide in what degree this impairment is to be attributed to the syphilis and in what degree to the drug. O'Leary and Becker recorded visual defects during treatment in 10·6 per cent. of their patients with objective findings in the fundi in 4·3 per cent. and persistent functional impairment in more than half of these. Their experience is that even subjective defects, without apparent changes in the fundi, are not to be lightly regarded. In Dr. Silverston's cases four patients out of a total of 20 complained of dimness of vision, and in one of them a slight defect became permanent. It would appear from comparison of the reports up to date that for the majority of cases tryparsamide has no proved advantage over the more tried arsenical compounds. Tryparsamide injections are available for those not suited to the risks of malarial treatment, but the visual complications offer a hazard which it has not been possible to obviate.

DULL AND BACKWARD CHILDREN.

EDUCATIONAL authorities in different parts of the country are showing themselves alive to the importance of the problem of dull and backward children, as distinct from that of mentally defective children, for whom legislative provision has been made, and for whom also educational opportunities are in many areas available. The County Borough of Huddersfield has issued an account of an inquiry by its medical officer, Dr. S. G. Moore, into this problem. He took as the subjects of his inquiry all children who were one or more classes behind others of their age, constituting, as he found, 3·14 per cent. of the total number of children in the schools. This figure is considerably below the 10 per cent. suggested by estimates and actual inquiries in other areas, and it is probable that a large number of backward children have been missed, who, owing to the prevalence of the system of promotion by age, irrespective of merit, are actually working in the classes of the average children of their own age. The object of the investigation was to determine how far backwardness was due to inherent dullness, and how far to other causes—physical defect or disease, irregular attendance at school, faulty grading, mental attitudes to school and teacher. Dr. Moore used the Stanford-Binet scale of intelligence tests, and his results are somewhat startling, for they show, taking an intelligence quotient of 90 as a lower limit of normality, that, out of 288 children examined, 184 were either normal or actually superior in intelligence. It is generally recognised that among these children educational deficiency is greater than intelligence defect, but Dr. Moore's figures are so striking as to suggest either some flaw in our educational methods or in our means of testing intelligence. Dr. Moore employed a further test, apparently designed by himself, to try "the power of the child to recognise incongruities and the proportional relationships between two or more related things." He does not state the nature of the test, but if it has not been itself previously tested and standardised by trial upon normal children, it is not convenient to make it the basis of a conclusion so contrary to general experience as he does—viz., that out of 288 backward children examined, the backwardness of only 6 was accounted for by inherent mental dullness. The others are explained by either personal bodily condition or environment, but it is pardonable to doubt whether defective eyesight, for instance, unless of high degree, is in itself ever a potent cause of backwardness, or whether a general condition of ill-health, such as malnutrition, is so much a cause of backwardness as it is along with backwardness a result of an inherently feeble stock, physically and mentally. In some quarters there is a tendency to exaggerate the rôle of heredity. Dr. Moore tends to the other extreme, and as far as can be seen from the data in this report, on inadequate grounds. His protest against too early labelling of children as "inferior" or "deficient" will elicit much sympathy, but that is scarcely sufficient reason for denying to these children the benefit of the special teaching they require. The less backward cases might, as he suggests, be dealt with by correct grading in the standards, but the needs of the more severe cases, as of the feeble-minded, can only be adequately met by classes and schools with special curricula.

ALIMENTARY HYPERGLYCÆMIA.

IN our issue of Sept. 18th we published some interesting observations by Dr. C. D. Shapland on the effect of the ingestion of cane-sugar on the blood. The subject is of such importance that all new observations are worthy of record and close study. The alimentary glycosuric test put forward in 1885 by Corlat for a long time held the field as a means of investigating hepatic glycogenesis, but has been superseded by the test of alimentary glycæmia brought into notice in 1908 by A. Gilbert and A. Baudoin. Further experiments have lately been published[1] by Dr. P. Introzzi, of Pavia, which have brought some interesting facts to light and supplement those of Cammidge, H. Gray, and others. The method employed was to give the patient fasting in the morning from 40 to 100 g. of sugar (glucose, lævulose, or lactose) dissolved in 100–200 c.cm. of water, having previously taken some blood from the finger for examination. Further samples of blood are taken regularly at half-hourly intervals for four hours, the patient being kept in bed and without food. It is thus possible to obtain a curve indicative of the glycæmic reaction composed of an ascending phase, a descending phase, and sometimes of a plateau placed between these two. The typical curve which is observed in a healthy individual shows that the saccharine content of the blood, temporarily modified by the administration of even a small quantity of a monosaccharide, promptly regains equilibrium after a phase of rapid ascent, reaching a moderate height always in relation to the amount of sugar taken after 30–40 minutes. This is preceded by a phase of descent also rapid, followed, however, by a brief phase of hypoglycæmia, after which the saccharine content promptly returns to its primary value. The total duration of the reaction should not exceed two hours, in which time the glyco-regulating mechanism, if it is functioning normally, should rapidly free the organism, or rather the blood, from an invasion of sugar which would keep it in a state which is not normal. If the phase of ascent in the curve is prolonged to excess, if the summit is too high or with a plateau, if the descending phase is too slow or with a phase of hypoglycæmia out of proportion to the hyperglycæmia, if there are marked oscillations or the total duration of the reaction is unduly long, that is evidence of some insufficiency in the glyco-regulating mechanism. In the cases examined by Dr. Introzzi were included affections of the liver, of the thyroid, and mild diabetes, and they all showed in a more or less striking manner, when submitted to the test of hyperglycæmia, a deviation from the normal carbohydrate metabolism. In liver disease in general the glycæmic content while fasting was not above normal (1 per 1000), except in one case of large syphilitic liver with splenomegaly and one of chronic jaundice and ascites from a tumour of the head of the pancreas, in both of which the content was 1·36 per 1000. In affections of the thyroid (Basedow's disease and simple goitre), the values found were not above normal. Thus a normal content during fasting does not exclude a potentially compromised glyco-regulating mechanism, while marked deviations from normal are always found by the

[1] I Problemi della Nutrizione. Giornale di Fisiopatologia di Clinica e di Dietetica. Rome. February–May, 1925.

test of induced hyperglycæmia. Usually when the glycæmic curve is changed by glucose, it undergoes the same modification with lactose and lævulose, but the oscillations caused by the latter monosaccharide conform more to the normal. The renal permeability was found to vary, in one case reaching 2·30 per 1000, without any glycosuria ensuing; the threshold of renal permeability for lævulose, however, was found to be lower than for glucose and lactose. The study of glycæmic curves may be of considerable importance in morbid conditions characterised by hepatic lesions as a possible means of estimating the degree of functional alteration of the organ, and these observations of Dr. Introzzi are a valuable contribution.

THE ADULTERATION OF FOOD.

Mr. G. D. Elsdon, Lancashire county analyst and formerly Salford Borough analyst, has published some interesting notes on food adulteration as an addendum to his report for 1925 to the Salford Health Committee. The series of Acts now regulating the purity of food began with the Food and Drugs Act of 1875, which, with modifications and supplements, is still the main provision against sophistication. Local authorities taking proceedings under this Act are apt to find it hard to prove their cases; on questions of fact the evidence of inspectors or analysts is usually accepted, but questions of trade uses and public requirements are frequently brought forward by the defence, which often has large sums of money placed at its disposal by commercial organisations. The subject of "trade custom," says Mr. Elsdon, is one of great urgency and importance, since it recurs again and again where manufacturers are placed on their defence by charges of adulteration. Many interesting examples of prevalent practices are given in the report. The mixing of a small quantity of butter with margarine does not affect the flavour, Mr. Elsdon considers, and is only done so that the public may be encouraged to buy some particular article and that the use of the word "butter" may be justified. As to jams and marmalade, some half dozen of the larger firms and a few of the smaller ones do produce a genuine article, but, generally speaking, fruit pulp, fruit substitutes, glucose, pectin, gelatin, agar-agar, and artificial dyes are more in favour with the "preserve manufacturer" than fruit itself. In a recent correspondence in the *Times* it was suggested that so-called improvement by the admixture of "a little pure fruit juice" is justifiable because jam made from certain fruits, such as strawberries, is too fluid for the popular taste without some jellifying addition; but there is no doubt that often this specious phrase covers deplorable adulteration. Of flour, Mr. Elsdon says that "it is no exaggeration to say that the present position of the flour-milling industry in England should not be tolerated in any civilised country, whilst at the same time it may be admitted that only in such a country would adulteration of this type be attempted." He remarks that the use of alum to produce a white loaf is nowadays not at all common, though ozone and chlorine are being used to some extent. One form of adulteration which is now largely if not universally practised is the addition of so-called improvers to flour. An improver may be simply a substance to lighten the colour of the flour or of the finished loaf, or it may be used to produce more loaves per sack, by making the dough absorb more water. At first calcium phosphate was the substance used as an improver, but, Mr. Elsdon states, "more objectionable still are the newer forms of adulterant. A very large percentage of flours now contain persulphates, peroxides, and other compounds, which are allied to the so-called oxygen compounds used in the modern laundry. Their use should be prohibited. It can only be repeated that the bulk of the flour sold in this country to-day is seriously adulterated to the great detriment of the purchasing public." Mr. Elsdon says that probably no kind of food is more adulterated than the so-called temperance drinks, fruit cordials, and similar preparations, whilst his comments on medicated wines will confirm the opinion of those who prefer to take their wine, their meat juice, and their medicine out of separate glasses.

CONGENITAL OCCLUSION OF POSTERIOR NARES.

CONGENITAL occlusion of the posterior nares is a condition which presents itself every now and then to the rhinologist. Outside its clinical bearing and its associated relations little is definitely known about it; only two examples of the true affection seem to have come to autopsy, and only one of these has been treated by maceration. Prof. J. E. Frazer, in opening a discussion at the Post-Graduate Hostel in the Imperial Hotel on Sept. 21st, dealt shortly with the probable origin of the malformation in the course of an address on the Clinical Bearings of Embryology. The nasal fossæ, as he pointed out, during development increase their height in an upward and backward direction, and not downwards; in this growth the primitive posterior nares lengthen upwards, keeping pace with the increasing height of the fossæ, so that they finally extend from just above the premaxillary level to that of the highest part of the roof of the mouth cavity. The bucco-nasal membrane is stretched and ruptured in the growth. The lower and greater portions of these elongated openings are then closed by the palate folds, the unclosed portions forming the definitive choanæ. As the fossæ grow upward in the mesodermal bed, that part of the tissue which remains between them forms the septum, and the posterior edge of this is the part of the roof of the mouth left between the two openings, to which the palate folds have attached themselves. The presence of congenital stenosis or occlusion is best explained, in Prof. Frazer's view, by assuming that the upgrowth of the posterior opening on the side affected has not taken place in keeping with that of the fossa itself. The part of the mouth-roof concerned is formed of visceral mesoderm, derived from the maxillary process and forming a layer on the buccal surface of the paraxial mesoderm in which the fossa is embedded. Normally this visceral mesodermal layer is split by the ascending opening, and is deposited on the septum and on the outer wall of the opening; the vomer is formed in this mesoderm where it covers the back of the septum. When the layer is not opened out, but remains as a postero-inferior wall to the fossa, its mesoderm contains potential bone, belonging to the vomerine system, spread out within it. Bone is therefore to be expected in the formation, continuous with the front and upper part of the vomer. When the palate fold closes across this plate it is necessarily fairly closely apposed to it, but is only attached near the middle line. After birth, however, the height of the vomer is increased by addition to its lower and back part, so that the palatine level is pushed away somewhat from the plane of the obstructing plate, which, with reference to the palate, can now be described as inclining downwards and forwards. It may or may not possess an opening in its lower and front part, representing the original and very slightly enlarged primitive naris, from which the bucco-nasal membrane has disappeared. Sir James Dundas-Grant, who was in the chair during the discussion, spoke on this subject, and confirmed the existence of bone, which is, we believe, usually present in these formations.

BARON LARREY.

IN the *Military Surgeon* for September Captain James D. Edgar, late of the United States Army, gives an account of Dominique Jean Larrey, who was the first Napoleon's principal medical officer, and initiated modern methods of handling and evacuating war casualties. Before his time the wounded were indeed collected and dressed at once on the field, but the ambulances, heavy vehicles with 40 horses, were left behind before battle, and only reached the front after one or two days, when further time was lost

in the journey back to the surgeons and hospitals. Larrey saw that this delay meant death to many. Using as his pattern the light guns or *artillerie volante*, he devised *ambulances volantes*, small wagons with large springs and stuffed mattresses, drawn by two horses (for two lying patients or four sitting) or four horses (four lying or eight sitting). These could come up to the firing-line, and even accompany cavalry, and they carried medical staff and dressings to the line. The wounded were now collected, dressed, and taken at once in ambulances to the surgeon at what we would call the main dressing station; they were operated on very early, and then conveyed quickly to hospitals three to ten miles in the rear, where they were all in bed within 24 hours, even after the great battle of Austerlitz. There was less suffering, he discovered, in rapid evacuation than in confinement in crowded hospitals. Larrey also improved treatment, recommending that the skin round wounds should be kept very clean, that salt and chlorinated soda solutions should be used instead of ointments in the treatment of wounds, and that dressings should be done as rarely as possible. His chief insistence was on the urgency of amputation where it was required, and it is now clear why this promptness would prevent tetanus, as he asserted. Resections, he considered, should be done instead of amputations wherever possible. He found blood-letting uniformly disastrous, and blisters of no avail—the raw surface, moreover, being liable to moist gangrene—and insisted, Hippocrates notwithstanding, that wounded men require a generous diet. Larrey was much beloved by the soldiers, and treated French and enemy wounded equally; it is said that this practice saved him when he was captured by the Germans after Waterloo, and sentenced to be shot. Recognised by a German doctor, he was taken to headquarters and released by Blücher whose wounded son he once had saved. After Austerlitz Napoleon had made him Baron Larrey, giving him a pension of £200 a year, and after Waterloo he continued to be much respected, being made surgeon of the Royal Guard and having his pension restored. When he visited London in 1826 he was cordially received by the English medical profession. At the age of 76 he inspected the French hospitals in Algeria, but contracted pneumonia on his return to France, and died at Lyons in 1842. He was buried in Père la Chaise in Paris, and his name is on the Arc de Triomphe. Napoleon, in his will, left him 100,000 francs, as "the most virtuous man I have ever known," and in French, as Captain Edgar points out, the word "virtuous" means more than in English, for it conveys the idea of bravery and utility to the State. In the old days Baron Larrey used to be quoted as proof that France recognised more generously than England the services of her doctors, but he had a specially great opportunity and used it magnificently.

THE GARDENS OF MADEIRA.[1]

IN an interesting little publication, Dr. Michael Grabham assumes the mentality of the British tourist as receptive and intelligent even if uninstructed, and proceeds in friendly vein to identify for him the more prominent features in the Madeira flora, if with special reference to gardens still with wide notice of general botany. The book is certainly an invitation at this period of the year, for those who can accomplish such charming plans, to sojourn in Madeira round about Christmas time. When shortening days here give a foreboding of the approach of winter many who know the rigors ahead, with which they can cope only miserably, will feel tempted to resort to an island where "Spring is perpetual and Summer occurs in alien months." Dr. Grabham reminds those in charge of such patients that the transit from winter to summer conditions can now be made with complete comfort in less than three and a half days, and we learn that the visitor arriving at Christmas will find flowers which we associate with spring and early summer blooming in full profusion and occurring promiscuously with the numerous conspicuous and fragrant plants indigenous to Madeira, which in this country decorate glass-houses or make but a transient appearance in the open. Mid-winter vegetables continue their autumnal yield through December and January, and green peas and cauliflowers have become abundant. Speaking from the botanical point of view, he notices that in general character the flora of Madeira confirms the rule relating to an insular collection, showing many orders with one genus only, and genera with a solitary species. Analysis of the comprehensive flora of the island has been due to the descriptive and identifying work of British botanists, and a comment on the profusion of specimens as well as upon the easy circumstances of growth and reproduction is furnished by a semi-apologetic phrase in which Dr. Grabham confesses that his plan for taking the garden flowers in monthly sequence has been baffled by "the exercise of a perverse exuberance in the genera, and a tendency to transgress all limits and break forth anew in unseasonable revivals."

[1] The Garden Interests of Madeira. By Michael Comport Grabham, M.D., LL.D., Fellow of the Royal College of Physicians. London: Printed by William Clowes and Sons, Limited. 1926. 5*s*.

CHINA MEDICAL ASSOCIATION.

IN spite of the political situation the China Medical Association held its eighteenth Biennial Conference at the beginning of this month in Peking. Since the last of these conferences the Association has dropped the word "Missionary" from its title so as to become more representative of medical interests in China, and the broadened basis has brought an increase of membership. Those who administer its affairs are doing good work under considerable difficulties, and during the past year or so these have been increased by the enforced invaliding from China of the President and Vice-President of the Association and the Editor of its journal. Missionaries seldom have large financial resources and the Association is without any endowment fund. It would hardly have been possible to carry on the work at all but for assistance from the China Medical Board of the Rockefeller Foundation, which during the past five years has contributed 25,000 dollars towards its expenses. Unfortunately, the period of this grant now comes to an end, but the successful record of the Association's work should strongly recommend renewal of the subsidy. Even the précis of papers read at the Conference make it obvious that really valuable work is being done in various parts of China by members of the Association, and the programme shows that they have an efficient organisation; the *China Medical Journal*, which records their research and opinions, has become familiar throughout the world. At the suggestion of the Association the various medical societies of China have formed a joint council which is working for public health, and the courageous way in which the immense sanitary problems of that country are thus being faced makes it reasonable to hope for important if gradual reform.

ON SUSPICION OF RABIES.

OUR medico-legal correspondent on page 724 tells of a dog which was clubbed to death a fortnight ago at Balham on a suspicion of rabies and he queries whether police officers are properly instructed to deal with such an occasion. The larger question arises whether it is now reasonable for anyone in this country to suspect an animal of having rabies. With the exception of Australia this infectious disorder of animals is to be found in all parts of the world, although, as we are reminded in the most recent monograph [1] on the subject, the number of cases

[1] Lyssa bei Mensch und Tier. By Prof. Dr. R. Kraus, Dr. med. vet. F. Gerlach, and Dr. F. Schweinburg. Berlin and Vienna: Urban and Schwarzenberg. Pp. 464. M.30.

has greatly diminished in civilised countries in comparison with earlier times when epidemics were frequent. The Netherlands have, in fact, recently become quite free. Great Britain in 1895 had to record more than 600 cases in 30 counties, and it was only the quarantine for which the late Lord Long was so cruelly abused which rid us of an anxiety ever present in countries where dogs and human beings live in close proximity. From 1903 on Great Britain was free from rabies, and the relief would have remained complete had it not been for the thoughtless or criminal evasion of quarantine regulations by those who reached this island by sea or air. In 1918, as the result of an outbreak in Devon and Cornwall, introduced by aeroplanes reaching Plymouth, 30 persons were bitten by dogs ascertained to be rabid, and in the following two years 150 cases were notified from 14 counties and 33 from 9 counties, so that the Ministry of Health felt itself obliged to set up a number of centres at which Pasteur treatment could be initiated without delay. In the House of Commons at that time Sir A. Griffith-Boscawen remarked that dogs suffering from rabies had been known to wander great distances from their homes, although the farthest recent excursion was one of 50 miles. The incubation period in one case was as long as seven and a half months, although the disease did not occur in any dog following release from its six-month quarantine, and the Ministry of Agriculture then and since was satisfied that existing regulations are adequate. Happily, since 1921 this country has remained completely free from imported rabies, and while the smuggling of dogs must still be regarded as a conceivable possibility, the risk of reintroduction of the disease should be very small indeed.

WHAT IS A SAUSAGE?

THE answer of the Edinburgh city analyst, Mr. A. Scott Dodd, to this conundrum is "a bag of mystery." In examining 50 samples of sausages made in various parts of the country Mr. Dodd found that the moisture varied from 31·2 to 58·2 per cent.; the fat from 7·0 to 42·9 per cent.; the starch, flavouring, &c., from 5·3 to 33·7 per cent.; the proteids from 5·6 to 12·9 per cent., and the meat from 29·6 to 80 per cent. During the meatless days of 1918 sausages were included in the Meat Rationing Order as meat, and the minimum quantity of meat was fixed at 67 per cent. for first quality and 50 per cent. for second quality sausages. Even in this Order, which has now been revoked, no distinction was made between fat and lean meat. In view of the possibility of sausages being made mainly of fat and "starch filler," Mr. Dodd thinks it would be advisable to limit the permissible proportion of fat. It would be impossible to determine accurately the proportion of liver, gristle, &c., but the proportion of nutritious fat-free meat may be satisfactorily deduced from the percentage of proteid nitrogen present, as gristle does not contain much nitrogen. As the result of his experience Mr. Dodd suggests the following standards: (1) sausages to be of two grades only; (2) first-grade sausages (to be indicated by a band and conspicuously labelled) to contain not less than 67 per cent. of meat, second grade not less than 50 per cent.; (3) fat to be included as meat but not to exceed half the total meat present.

Dr. Charles J. Martin (Director of the Lister Institute and Professor of Experimental Pathology in the University of London) and Sir Frederick G. Hopkins (Professor of Biochemistry in the University of Cambridge) have been appointed members of the Medical Research Council to fill the vacancies caused respectively by the death of the late Lieut.-General Sir William B. Leishman and by the retirement of Prof. T. R. Elliott.

ALTHOUGH arrangements for the coming session of the Royal Society of Medicine are not yet complete, there is every indication that it will be very successful. Besides the ordinary meetings of the sections there will be one special discussion on Blood-letting by the the Society as a whole, and ten discussions held jointly by two or more sections. The first social evening will be held on Monday, Oct. 18th, when the guests will be received by the President, Sir James Berry, and Lady Berry, at 8.30 P.M., and at 9.30 P.M. Sir Arthur Keith will give a short address entitled John Bull: a Study in Anthropology, with lantern illustrations. It has been found necessary to make a rule that guests at these receptions, unless accompanied by a Fellow, Member, or an Associate of the Society, will need an invitation card; this may be obtained by Fellows, Members, or Associates on application to the Secretary of the Society. The annual dinner has been arranged for Thursday, Nov. 18th, at 8 P.M., at the Hotel Victoria, Northumberland-avenue. The Prime Minister has consented to be the Society's guest of honour if his duties permit.

The Services.

ROYAL NAVAL VOLUNTEER RESERVE.

Proby. Surg. Lts. H. M. Petty, F. M. B. Allen, and E. E. Henderson to be Surg. Lts.

ROYAL ARMY MEDICAL CORPS.

Col. E. T. Inkson retires on ret. pay.

Lt.-Col. C. C. Cumming to be Col., vice Col. E. T. Inkson, to ret. pay.

Maj. H. Harding to be Lt.-Col., vice Lt.-Col. C. C. Cumming.

The undermentioned Capts. to be Majs.: W. Bird (Prov.), A. C. Jebb, J. B. Minch, T. I. Dunn, C. Popham, A. J. O'B. O'Hanlon, W. G. Shakespeare (Prov.), O. C. Link (Prov.), E. E. Holden (Prov.), W. Campbell, W. H. Cornelius, R. G. Martyn (Prov.), N. Cameron (Prov.), C. F. Burton, S. D. Robertson, and R. H. Hodges (Prov.).

ROYAL ARMY RESERVE OF OFFICERS.

Lt.-Col. C. F. Wanhill, having attained the age limit of liability to recall, ceases to belong to the Res. of Off.

MILITIA.

Maj. R. Magill retires on reaching the age limit.

TERRITORIAL ARMY.

Capt. H. P. Gabb, from Active List, to be Capt.

Capt. J. S. Cooper having attained the age limit, is retd. and retains his rank.

Lt. C. C. Taffs is secd. under para. 137 T.A. Regulations.

W. H. M. Jones to be Lt.

ROYAL AIR FORCE.

Flying Officer D. Magrath is transferred to the Reserve, Class D.2.

INDIAN MEDICAL SERVICE.

Maj. C. R. O'Brien to be Lt.-Col.

Ephraim Benjamin to be Temp. Lt.

The King has approved the retirement of Lt.-Col. Padmâkar Krishna Chitale.

Summer Time, which commenced on April 18th, will cease on Sunday next, Oct. 3rd, at 3 A.M., when the clock will be put back to 2 A.M. The hour 2–3 A.M. summer time will thus be followed by the hour 2–3 A.M. Greenwich time.

KING EDWARD'S FUND.—This great Fund's twenty-ninth annual report, which has just been issued, shows that the income for the last financial year was £413,872, and the expenses £312,420. The receipts included £50,000 from the estate of the late Mrs. John Wells, and £85,000 from that of the late Lord Mount Stephen. The unexpended balance was placed to the Funds and Capital Accounts. Since the establishment of the Fund in 1897 the receipts have amounted to £8,846,357. Of this total the British Red Cross Society and the Order of St. John of Jerusalem have contributed £259,000, the Combined Appeal produced £395,000, and £383,000 has been provided by the League of Mercy. The distributions to hospitals, convalescent homes, and sanatoria for consumption come to £5,263,000, and the working expenses are less than 3½d. in every pound received.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXCI.—THE TREATMENT OF CHOLERA.

CHOLERA has been defined by Manson as an acute infectious epidemic disease characterised by profuse purging and vomiting of a colourless serous material, muscular cramps, suppression of urine, algidity and collapse, the presence of a specific bacillus in the intestines, and a high mortality. The passage of profuse colourless watery stools (often containing white flakes of denuded intestinal epithelium) accompanied by copious vomiting of watery fluid is pathognomonic of cholera. Later diagnostic signs are muscular cramps and suppression of urine, absence of the pulse at the wrist, cold and clammy skin, shrunken features, shrivelled extremities, and feeble, husky voice.

The golden rule for guidance of the practitioner in endemic areas and during epidemic times is that all diarrhœa accompanied by vomiting should be regarded as incipient cholera and immediately treated as such. Failure to appreciate the value of this rule has caused the loss of many lives. Since the patient's prostration is sometimes out of all proportion to the catharsis, cholera must be partly a toxæmia due to absorption of the toxins of the cholera vibrio from the intestines. But the collapse, suppression of urine, and subsequent uræmia are in most cases due to loss of fluid from the system, and if this loss of fluid is arrested collapse and other serious symptoms do not develop. This being so, the treatment of cholera naturally resolves itself into two stages: (1) the medical treatment of the stage of evacuation by intestinal astringents, with the object of arresting the diarrhœa and thus preventing the onset of collapse; and (2) the surgical treatment of collapse by intravenous saline injections in an effort to restore and maintain the circulation until the loss of fluid from the bowel naturally ceases.

As most cases of cholera, owing to the fulminating character of the disease, come under notice only when collapse has already set in or is impending, by which juncture the time for medical treatment is past, the great value of this treatment is not adequately realised.

The Stage of Evacuation.

For the treatment of cholera in the stage of evacuation the most popular and widely used of all remedies is opium, either alone or in mixtures with acids or carminatives. Doubts have frequently been expressed as to whether such treatment can cut short the disease, since it is impossible in any given case to declare that the disease would have developed into collapse had treatment been withheld. Some writers hold that the use of opium is dangerous, basing their arguments on the erroneous theory that opium is excreted by the kidneys. However, from records extending over many years of the results of treatment of a large number of cases of cholera in the endemic area of the Asansol Mining Settlement, it is now clear that opium combined with acids or carminatives is capable of cutting short the disease in the stage of evacuation in the great majority of cases. The mortality-rate in the mining settlement of cases of the fully-developed disease, most of them being collapsed, treated with such mixtures was only 50 per cent., compared with a *constant* annual mortality-rate of approximately 90 per cent. in wholly untreated cases. The great value of opium in the stage of evacuation of cholera was well summed up by the late Dr. A. J. Wall, who held—from a large experience of cholera in India and Europe—that if in the primary stage of the disease the evacuations are stopped the course of the disease will be stopped also, and that opium administered hypodermically before collapse has set in will in a large number of instances save the patient from this complication.

Drugs.

A doctor called in to treat a patient with cholera in the stage of evacuation should immediately give a hypodermic injection of morphia gr. $\frac{1}{4}$ c. atropine gr. 1/100. One of the antidiarrhœics mentioned below should then be prescribed and administered in the manner indicated.

℞ Sod. bicarb., gr. 15; creta preparata, gr. 15; spt. æther, ℥ 15; spt. ammon. aromat., ℥ 15; tinct. opii ammoniatæ, ℥ 30; aq. chlorof., ad ℥i. ℥i every 20 minutes until purging and vomiting have definitely ceased.

℞ Acid sulph. aromat., ℥ 15; tinct. camph. co., ℥ 30; tinct. chlorof. et morph. co., ℥ 5; aq. menth. pip. ad ℥i. ℥i every half-hour until purging and vomiting have definitely ceased.

Kaolin or China clay, known also as bolus alba, is a native white aluminium silicate, which in addition to being an intestinal astringent in large doses, possesses the property of adsorbing toxins from solutions, thus rendering them inert. It is used with great success in the primary stage of cholera—one ounce or more suspended in a glass of water being swallowed slowly by the patient every hour until diarrhœa and vomiting have ceased. Half doses are then continued every four hours during the succeeding 24 hours, and quarter doses subsequently until the risk of relapse is past—i.e., until the end of the third day.

I have reintroduced the use of the essential oils in the treatment of the stage of evacuation in cholera with much success in the form of the following mixture:—

℞ Ol. anisi., ol. cajaput, ol. juniper, āā ℥ 5; acid sulph. aromat., ℥ 15; spt. æther, ℥ 30.

Of this mixture half-drachm doses should be administered in an ounce of water every quarter of an hour for two or three hours, by which time all symptoms have usually disappeared. Doses vomited should be repeated. As the mixture contains no opiates it can be safely placed in the hands of any intelligent person for administration. For this reason it is particularly valuable in the treatment of cholera during epidemics when large numbers of cases have to be treated simultaneously. It is a powerful carminative, stimulant and astringent, quickly arresting diarrhœa, and thus aborting the disease. Relapses after its use are unknown, and no serious restriction of diet is necessary on apparent recovery.

The Stage of Collapse.

When owing to lack of treatment in the primary stage of the disease a dangerous amount of fluid has been lost from the system and collapse has set in, intravenous saline injections must be resorted to without delay if life is to be saved. It should be clearly appreciated that collapse from loss of fluid in cholera does not differ fundamentally from collapse from hæmorrhage, the principles underlying the treatment of the latter applying with equal force to that of the former. Success depends on the introduction of a sufficient quantity of fluid rather than on its quality. The rôle of intravenous saline injections in the collapse stage of cholera is purely symptomatic and non-specific—viz., to replace as often as may be necessary the fluid lost from the circulation until the violence of the attack has spent itself and the flux from the bowel spontaneously ceases. Repeated injections are in many cases necessary over a period ranging from two to six days. Owing to its protracted and exacting nature, the treatment of collapse in cholera is much less successful in private practice than in hospitals specially organised and staffed to carry it out assiduously.

Leonard Rogers, following Gaertner and Beck, has advocated the use of intravenous hypertonic saline injections (120 gr. of salt to the pint of water) on the theoretical grounds that by oversalting the blood diarrhœa would be arrested by osmotic attraction of fluid from the intestines into the blood-vessels and the circulation thus be effectively maintained. Many years experience in India has convinced me that hypertonic salines possess no such specific actions, repeated injections of these, as of other salines, being in many cases necessary to maintain the circulation.

Isotonic salines (90 gr. of salt to the pint of water) have been found to answer all physiological requirements for the replacement of the fluid lost in cholera and the maintenance of the circulation until the flux from the bowel ceases. They are used intravenously, subcutaneously, and rectally as circumstances require. Intravenously they are administered preferably in the form of alkaline isotonic salines, which were first introduced by Sellards. He had observed that in cholera very large doses of alkalies were required by mouth to render the urine alkaline, and concluded that alkalies administered intravenously in conjunction with isotonic salines would probably relieve suppression of urine after collapse, and thus prevent the onset of uræmia. In practice this has proved true. Alkaline salines should therefore be used as a routine measure in the treatment of collapse in cholera, 60 gr. of sodium bicarbonate being added to each pint of isotonic saline solution.

In totally collapsed patients 3–4 pints of saline may be required at once to restore the pulse at the wrist, the solution being run into the vein at the rate of 2 oz. per minute. Should collapse recur, as it frequently does, either because of the absorption of the fluid by the dehydrated tissues or by its leakage through the denuded intestinal mucous membrane into the gut, further injections must be given until the circulation is adequately maintained, ½–2 pints being administered slowly on each occasion as circumstances demand. Intramuscular injections of pituitary extract are of considerable value in combating collapse, in conjunction with intravenous saline injections. Where the pulse at the wrist is very feeble, showing that collapse is impending, subcutaneous injections of isotonic saline under the skin of the flank are often successful in avoiding it. Rectal injections of hyperalkaline saline—150 gr. of sodium bicarbonate to the pint of isotonic saline—should be administered slowly every 2–4 hours in cases where collapse has been overcome but suppression of urine still persists.

Vaccination, either by hypodermic injection of ordinary vaccines or by oral administration of Besredka's bilivaccine, conveys immunity lasting for several months. These vaccines are thus useful where there is continued exposure to infection in endemic areas. In my experience the mixture of essential oils mentioned above, taken three times a day in doses of a drachm, during epidemics afford almost absolute protection against the disease.

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Special Articles.

TEACHING OF PSYCHIATRY TO MEDICAL STUDENTS.

BY W. S. DAWSON, M.D. OXF.,
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A NEED for alteration in the teaching of psychiatry in British medical schools has long been apparent, and has now been commented upon by the Royal Commission in Lunacy. A revision of the present curriculum is all the more imperative on account of the mental hygiene movement which, already well established in the United States and elsewhere, is beginning to assume activity in this country. Moreover, it is likely that before long the medical profession will be called upon to deal more effectively than hitherto with the problem of mental disorders. The graduate who wishes to specialise is already provided for in several comprehensive courses of instruction, while the general practitioner embarks upon his work with an all-too-narrow outlook resulting from the scanty attention paid to psychiatry in his student years. Under the present régime not a few medical students carry away with them an unduly restricted and pessimistic impression of mental disorders derived from their experience of demonstrations at mental hospitals, and from instruction which is often limited to descriptions of neurotic and psychotic types, with scanty attention to the underlying principles of investigation and treatment. Not until this attitude is corrected and broadened by a revision of the present methods of teaching will the general practitioner be prepared to play that adequate part in the early treatment of mental disorder which modern knowledge is rendering possible and which the general public is beginning to demand. The matter has been receiving attention in the United States, where the teaching of psychiatry in some medical schools is free from the defects of our system and has certain features which might be adopted with advantage.

Teaching of Psychiatry in America.

Some years ago the American Medical Association made a survey of medical schools in the United States, and categories were drawn up according to the standard of teaching. More recently an inquiry was made concerning instruction in psychiatry, and, while it was found that even in the "A" class schools there was a great variation in the importance attached to this subject, yet it was the general opinion that 60 hours, divided equally between didactic and clinical work, was the minimum time which should be set apart. Several schools in which psychiatry was taught as part of the neurology course reported that their schedules were in process of revision, so that the former might receive the attention demanded by modern requirements. The following are the courses in psychiatry required by certain universities.

1. *Chicago.*

Two year pre-medical courses in psychology are optional, but are strongly urged (48 to 96 hours lectures and practical work).

Clinical Psychiatry.—Demonstration and conference courses at the Psychopathic Hospital (a hospital for early mental cases run in connexion both with the university and a general hospital), 24 hours. Clinical and conference course of 24 hours at a public mental hospital.

2. *Colorado.*

Third Year.—Lectures on the fundamental laws of psychology as applied to the relation of physician and patient, and to diseased states; psycho-analysis.

Fourth Year.—Clinical instruction in psychiatry and neurology, 42 hours. The class is divided into small sections, each spending one and a half hours daily for three and a half weeks. Lectures in neurology and psychiatry, 66 hours. In the lectures in psychiatry special attention is paid to the neuroses and to the principles of psychotherapy.

3. *Columbia, New York.*

Second Year.—Fifteen lectures and demonstrations in psychopathology. 1. Introductory: Mind and medicine. 2. Structural basis for mind (mind and body). 3. General concepts of intellect and emotion. 4. The "ego instinct" group. 5. The "sex instinct" group. 6. The "herd instinct" group. 7. Cultural modifications of instinctive behaviour. 8 and 9. Mental mechanisms. 10. Abnormal types of mental adaptation; Psychoneurosis. 11. Psychosis. 12. Anomalies of mental development; crime, drug, and alcohol addiction. 13. Psychopathology of general illness. 14. Foundations for social psychiatry. 15. Foundations for mental hygiene.

Third Year.—Psychiatry, 15 lectures.

Fourth Year.—Thirty clinical lectures.

A total of 60 hours is required from all students. Certain additional courses are available, but are not obligatory.

4. *Harvard.*

First Year.—Medical psychology, 10 lectures. The topics include: Environment; emotional reactions; modification of experience; rôle played in these reactions by the various systems; ability to receive, elaborate, store, and reactivate impressions; variations in constitutional endowment; special lines of weakness; importance of personal factors in medicine in general and especially in relation to nervous and mental disorders.

Third Year.—Sixteen clinical lectures at the Boston Psychopathic Hospital. Examples of all the more important

varieties of mental disorder; special emphasis on mild and incipient cases which are frequently treated by the general practitioner. More attention is given to the dynamic analysis and practical problems of the individual case than to questions of formal classification. Examples of nervous and mental diseases of childhood are presented. Each student is given an opportunity to study individual cases. Instruction is also carried on in 12 periods of two and a half hours each, in which small groups of students examine and discuss cases under the supervision of members of the staff.

5. *Johns Hopkins Hospital (Phipps Institute).*

The following courses are obligatory.

First Year.—Personality study as a concrete basis on which to become familiar with the data and methods of descriptive and dynamic psychobiology. Ten hours of class discussion followed by group discussion in which personal problems and experiences are reviewed.

This course enables the student to gain some insight into the working of his own mental processes, so that later he may handle patients with greater understanding of the determinants of conduct, emotional factors, intellectual assets and deficits, and so forth. The student is encouraged to think out his own problems rather than to accept some definite school of psychological thought. In many respects this course is more of a mental exercise than a set form of instruction.

Second Year.—Course familiarising the student with the methods of examination of cases with well-defined problems and reaction types. Emphasis is laid on: Methods of taking the life-history; study of assets and determining factors; intelligence tests; mental status; principles of getting at dynamic determining factors of the patient's life; study of orientative activity, associative processes and resources, affective assets, and habit formations.

This course takes 20 hours of group work. The success with which the student approaches this stage of his work will have been determined largely by the thoroughness with which he entered into the course of the preceding year.

Third Year.—Examination and discussion of cases. Review of fundamental psychopathological reaction types. In this course stress is laid on the study of types and problems, on the observation of symptoms and signs in an orderly manner, and on the recognition of outstanding problems of adjustment. Somatic therapy, the principles of treatment by rest, graded re-education and other measures also receive attention. There is a recapitulation and study of psychogenic and constitutional problems. The course is completed in eight periods of two hours each in groups of five students.

Fourth Year.—Eleven clinical demonstrations of psychiatric cases, groups, and topics. Individual study and report of at least six cases (out-patient or ward) during the fourth year.

All the courses of instruction at the Johns Hopkins total not less than 65 hours, spread over the four years of clinical study. The aims of this teaching have been expressed by Dr. Adolf Meyer, Professor of Psychiatry at Johns Hopkins, as follows:—

"The most fundamental departure from current tradition is the emphasis not on the question whether the patient presents one or other of a set of diseases, but rather on the question how many facts and conditions enter into the state of the patient, what reaction complexes are recognisable as relative entities, and what psychopathologic, cerebral, general, somatic, endocrine, toxic, and infectious components. Let us get away from the dominant notion of classification of each patient as having just one exclusive disease."—Progress in Teaching Psychiatry, *Jour. Amer. Med. Assoc.*, vol. lxix., 1917.

The courses at the Johns Hopkins are the most comprehensive and liberal of all, and have served as an example to other medical schools in the United States, in many of which Hopkins graduates hold teaching positions. With the growth of scientific aids to medical diagnosis, and with the development of laboratory methods, there is an increasing danger of overlooking the personalities of the patients and the psychological factors in the clinical picture. How often does a diagnosis of "functional" after exhaustive physical examinations spell the cessation of efforts in further investigation and treatment on psychological lines! Some time ago Dr. G. E. Vincent, of the Rockefeller Foundation, spoke on this topic:

"It has been asserted with some reason that in its preoccupation with the diseases of the body scientific medicine has too much neglected the psychic and social factors. The rapid spread of the cults which invoke various forms of mental suggestion is probably due in some measure to the failure of modern medicine to include in its scope the relations of mental and physical states, to study these in a scientific spirit, and to utilise the healing power of rationally controlled suggestion. Recent progress in psychiatry, war-time experiences with disorders of the mind, the rise of mental hygiene, and the increased attention being given to these subjects in medical schools and at professional meetings, are evidence that the mental aspect of disease is being recognised more fully."

The Ends in View.

The leading medical schools in the United States aim at training the future medical practitioner to deal with the "functionals," the neurotics, and the psychotics which form no inconsiderable part of his practice with some understanding of scientific principles, instead of leaving him to learn by sad experience that many of his problems are psychobiological rather than physical.

Certain features in the schedules given above call for special comment. In the first place the student is introduced to psychology in his preclinical or early in his clinical years, so that he comes to the study of psychiatry with a certain amount of preparation and with some understanding of the dynamic factors which underlie normal and abnormal conduct; secondly, he is prepared to appreciate psychological factors in other departments of his clinical work; thirdly, clinical instruction in psychological medicine is wider and more intensive than is required by our examining bodies, and assumes an importance equal to that of other branches of medicine instead of remaining an unconsidered trifle. The actual handling and reporting of cases gives the student an understanding of psychopathological problems and of methods of treatment which lectures and demonstrations alone could scarcely do.

If, as is hoped and as the Royal Commission has urged, facilities for early treatment of mental disorders are multiplied, it may be expected that out- and in-patient clinics will work in close association with the general (teaching) hospitals. There should be no difficulty in finding adequate material for students even under existing conditions. Additions to an already overburdened curriculum are hardly to be contemplated. But modification of present teaching in psychiatry should receive serious attention.

Lectures in medical psychology have already been instituted in one or two British universities and should be available for students in all medical schools after the second professional examination has been passed. Quite general topics might be selected, provided that their bearing on psychiatry is kept in mind. A course of six lectures might be given as follows: (1) Relation of mind and body; (2) dynamic concept of psychology; (3) emotion and instinct; (4) mental mechanisms; (5) study of personality; (6) the individual and society.

In the teaching of clinical psychiatry greater attention might be paid to the actual handling of cases. The demonstration of severe and chronic types of mental disorder found in mental hospitals and of the more pronounced forms of congenital mental defect is of at least questionable benefit for the general practitioner, provided that he is taught to recognise suicidal risks and other dangerous anti-social tendencies. If no addition to the present curriculum is feasible, at least four of the 10 or 12 demonstrations which are usually given in mental hospitals might usefully be replaced by attendance and instruction in the psychiatric out-patient department of a teaching hospital. The value of investigating and reporting on cases, as is done in internal medicine, cannot be overestimated as a means of familiarising the student with the problems which have to be faced in psychiatry. It will be noted that this is made a special feature of the teaching at Harvard and Johns Hopkins. It is difficult in the dozen or so lectures which are usually given to cover all the ground which is desirable. A lecture devoted to the principles of case-taking and the evaluation and interpretation of symptoms would be of the greatest benefit. Other topics, such as the handling of neurotic and psychotic cases in general practice, the aims of mental hygiene, and the psychopathology of childhood, would be of more practical use

to the general practitioner than instruction about idiocy and dementia. Above all, it is desirable to inculcate a wider appreciation of psychiatry as not being limited to incurable "insanity." Questions on psychiatry should find a regular place in the papers, and cases should be presented for commentary in the clinical part of the final examinations.

It may be anticipated that if the student is given greater encouragement to regard psychiatry as a subject which is as important as other branches of medicine, he will not only reap the benefit in practice by feeling better able to cope with the psychiatric problems which come before him, but also that he will be in a position to further the aims of mental hygiene. Psychiatry has not yet said the last word on the question of the difficult and "nervous" child, the juvenile delinquent, and many other varieties of mal-adjusted personality. In the developments which have already taken place in the United States and which are being attempted in this country the general practitioner must be a sympathetic agent.

MEDICINE AND THE LAW.

Forceps Left in the Body after Operation: "Negligence but not Gross Negligence."

AT an inquest held last week upon a woman, aged 47, who died in St. George's Hospital, the verdict recorded by the coroner (Mr. Ingleby Oddie) was that "death was due to peritonitis following an operation for the removal of a pair of artery forceps negligently left behind in September, 1923, during an operation for the removal of a cyst." The coroner added, "and I further say that the said negligence was not gross and culpable."

The history of the case appeared from the hospital notes of the date in question, which were produced by Dr. R. A. Burns, at present resident assistant surgeon at St. George's Hospital. The deceased had been admitted to hospital on Sept. 16th, 1923, for immediate operation. She recovered and was discharged a month later. On Sept. 15th of the present year an operation was performed and a pair of Littlewood's forceps were found in the pelvis. They were six inches long and were still held together by erosion though broken. The patient progressed favourably and there were hopes of her recovery, but on Sept. 17th she died. Dr. H. B. Weir, who made the post-mortem examination, said death was due to peritonitis following the operation for removal of a foreign body from the intestines; he said he had read of such cases but had never seen one.

The coroner's verdict, it will be observed, distinguishes between simple negligence and negligence which is gross and culpable. This distinction corresponds with the difference between the lesser degree of negligence which is necessary in a civil action for damages and the more serious degree of negligence which must be present to justify a criminal charge. As the deceased did not survive there can be no question of a civil action for damages for negligence; her right to claim damages died with her. Otherwise it would have been strange if a jury in the High Court or in a county court had not considered it negligent to leave a pair of forceps in a patient's body after operation. The legal duty not to do so is so plain as to admit no denial; as the lawyers say, *res ipsa loquitur*—the damage tells its own story. It might, of course, have been difficult for the plaintiff to fix the personal responsibility. Dr. Weir, in his evidence at the inquest, stated that at St. Thomas's Hospital it is the custom to make a sister responsible for looking after all the instruments of an operation; he added, "the surgeon, however, is responsible for everything." The hospital itself would not be legally liable in damages. "A hospital authority," said Lord Justice Kennedy in Hillyer *v.* Governors of St. Bartholomew's Hospital (1909), "does not make itself liable in damages if members of its staff, of whose competence there is no question, act negligently towards a patient in some matter of professional care or skill or neglect to use or use negligently in his treatment the apparatus or appliances which are at their disposal." But the individual physician or surgeon may be sued provided that the action is begun within the period prescribed by the Statutes of Limitations. It is perhaps worth noting that, if the deceased had survived and had sued for damages, the period of six years within which she would have had to begin her action would have dated from September, 1923, when the alleged negligence occurred, and not from the later date when the unfortunate consequences were discovered.

To turn back to the criminal aspect of the case, Mr. Ingleby Oddie's verdict is a refusal to set the criminal law in motion. A coroner's verdict of murder or manslaughter against a named person is technically sufficient to send that person for trial before a criminal court. In practice, however, the coroner's verdict is seldom relied upon for this purpose, but proceedings are initiated before magistrates in order to have the accused committed for trial in the ordinary way. Where, as in the present case, the coroner's verdict has the deliberate effect of exonerating all concerned from any charge of criminal negligence, it would be most unusual to take any further criminal proceedings before magistrates with a view to placing anyone upon his trial.

Destruction of Dog Suspected of Rabies.

A police-sergeant stationed at Balham was summoned on Sept. 23rd for ill-treating a dog by killing it in such a manner as to cause it unnecessary suffering. The dog, it seems, was brought to the police station under suspicion of suffering from rabies. The officer, believing the suspicion reasonably well founded, killed the dog with three blows of his truncheon. It was alleged that the animal's cries aroused the neighbours, and ultimately the Royal Society for Prevention of Cruelty to Animals prosecuted the sergeant. Section 61 of the Metropolitan Police Act of 1839 authorises a constable of the Metropolitan Police Force to destroy any dog or other animal "reasonably suspected to be in a rabid state." The prosecution said there might have been adequate reasons for destroying this dog, but there could be none for killing it in this particular way. The magistrate held that the sergeant had not intended to cause unnecessary suffering but had in fact done so; he should not have hit the dog at random with his truncheon. The case was dealt with by ordering the defendant to pay 5 guineas costs but no penalty.

Parliament has made other provisions for the disposal of unwanted dogs. The Metropolitan Streets Act of 1867 (Section 18) authorises a magistrate, if he has cognisance of a complaint that a dog has bitten or attempted to bite any person in the metropolis, to direct its destruction, "and any police constable may destroy the same accordingly." Stray dogs seized and detained by a police officer under the general powers of Section 3 of the Dogs Act of 1906 may, if unclaimed after seven days, be destroyed "in a manner to cause as little pain as possible," and a warm-hearted legislature added that no dog so seized should be given or sold for the purpose of vivisection.

Rabies is a disease of which, happily, the present inhabitants of this country know very little. Probably, however, they know enough to take no risks. If a dog, alleged to be mad, is seen running at large in a public place, prudence may dictate its immediate destruction by any means possible. But if a dog is chained up at a police station, the same precipitancy may not be necessary. In the recent proceedings, when the police-sergeant quoted the 1839 Act as his authority to destroy upon reasonable suspicion, the representative of the prosecuting Society submitted that that provision applied only to dogs in the public street, not to dogs tied up at a police station. The submission is probably wrong as a matter of law, and in any case sympathy cannot be withheld from the police officer who undertakes an unpleasant and

possibly dangerous duty. But the incident suggests various questions. Are adequate official instructions issued to the police for dealing with occasions of this kind? Is the possibility of veterinary examination and of using a painless killer borne in mind? And was any post-mortem or other investigation made to ascertain if this was in fact a case of rabies?

Dangerous Drugs Regulations: A Severe Sentence.

The prosecution recently undertaken under the new Dangerous Drugs Regulations, which specially prohibit a drug addict from obtaining morphia preparations through several practitioners without disclosing the fact, has ended in a severe sentence. Mr. Gill, the Westminster police-court magistrate, at a previous hearing, seemed willing to release the accused on condition of his entering a home. At the final hearing, however, on Sept. 15th, a detective-inspector gave evidence of the man's criminal record which made a considerable difference to the magisterial disposal of the case. It appeared that the defendant had been convicted in different names of both fraud and housebreaking and that, though it was true that (as he had stated) he was gassed during the war, he was sentenced to three years' penal servitude in January, 1923. Mr. Gill passed a sentence of four months' imprisonment. It is hardly to be supposed that a drug addict who infringes the new Regulation will be so severely dealt with if his character is reasonably good.

NATIONAL HEALTH INSURANCE.

NEW ARRANGEMENTS FOR DENTAL BENEFIT.

SINCE July last a greatly increased number of insured persons have become entitled to dental benefit, the amount of money available for its provision exceeds £2,000,000 per annum, and a large majority of the approved societies and of the practising members of the dental profession are now concerned. During July a Dental Benefit Joint Committee, consisting of 14 members representative of approved societies and 14 of the dental profession, considered a new scale of fees and conditions of service, and early in August the report of this committee was approved by the Consultative Councils in England and Scotland.

It is understood that private contracts between patients and dentists for the payment of additional fees are only permissible under this agreement in exceptional conditions or where some form of treatment or appliance is desired not provided for in the scale, and the insured person is prepared to meet the additional charge. The committee recommended that the adoption of the new scale of dental charges should be conditional upon the institution of a service of regional dental officers charged with duties somewhat similar in character to those of regional medical officers, and the Ministry of Health and Scottish Board have undertaken to frame a scheme for such a service, the expenses to be defrayed out of the funds available for dental benefit. Under the schemes of dental benefit now in operation it is a condition that the whole of the cost of dental treatment shall be defrayed by the society, except that as regards provision of artificial teeth and repairs and remodelling of dentures a society may decide to pay a proportion of the cost, not being less than one-half. This provision was adopted on the advice of the Consultative Council with the object of encouraging conservative treatment. Apprehension having been expressed by certain societies that benefit under the new conditions may exhaust the available funds, the central health departments are considering the possibility of amending the scheme so as to permit a society in suitable circumstances to pay a proportion only of the cost of treatment, the principle of encouraging conservative treatment being maintained. The Dental Benefit Joint Committee will also prepare a model dental letter and formulate procedure for disciplinary action.

Agreed Scale of Dental Charges.

The following is the scale of dental charges for members of approved societies, which has been approved by the Dental Benefit Joint Committee, and is to operate from Oct. 1st, 1926, to July 6th, 1930:—

	£	s.	d.
1. Scaling and treatment of the gums—per individual	0	7	6
2. Fillings—per filling	0	7	6
3. Root treatment—			
Six front teeth, upper or lower—per tooth	0	5	0
Remainder, upper or lower—per tooth	0	7	6
4. Crowns, gold or other—per crown	1	11	6
Where root treatment is necessary, this may be charged for at the rates shown in (3) above.			
5. (*a*) Extractions—			
With or without local anæsthetic—per tooth	0	2	6
Maximum fee for upper or lower	0	15	0
Maximum fee for upper and lower	1	5	0
(*b*) General anæsthetics: (i) Administration fee—			
Upper *or* lower	0	7	6
Upper *and* lower	0	10	0
Where nitrous oxide or similar anæsthetic (simple administration) is used, only one administration fee to be charged to each patient. Maximum fee for extractions, including simple administration of general anæsthetic—			
Upper *or* lower	1	2	6
Upper *and* lower	1	15	0
(ii) Under prolonged anæsthesia. Where not less than 12 teeth are extracted at one operation under prolonged anæsthesia, excluding the simple administration of nitrous oxide or similar anæsthetic—			
Dentist's fee (including all extractions)	1	5	0
Anæsthetist's fee	*1	1	0
* Or such lower sum as the anæsthetist is ordinarily prepared to accept.			
6. Dentures—			
For first two teeth on a denture	1	0	0
For each additional tooth	0	5	6
Fee for a full or nearly full (ten teeth or more) upper or lower denture	3	0	0
Fee for full or nearly full (ten teeth or more per denture) upper and lower dentures	6	0	0
Where the fee for full or nearly full denture applies to the single denture, no charges under items (1), (2), or (3) above to arise in respect of the jaw concerned. Where the fee for full or nearly full dentures applies to the double dentures, no charges under items (1), (2), or (3) above to arise.			
7. Repairs, additions, and emergency treatment—			
Repairs and emergency treatment up to 10*s.* without previous submission of estimate—account to be rendered to the society on the society's recognised dental letter.			
Minimum fee for repairs and/or additions	0	7	6
Maximum fee for repairs and/or additions	1	10	0
8. Remakes—			
Fees to be calculated at two-thirds or, within 12 months, at one-half of the scale, with necessary additional teeth at 5*s.* per tooth.			
Maximum fee, including additional teeth, per denture	2	10	0
9. Examination and report—			
Where patient does not return for treatment	0	2	6

Conditions and Specification of Materials.

An appendix to the scale sets out the conditions and specification of materials approved by the committee, and to come into force over the same period. The dentist shall apply to each case he undertakes the degree of skill and attention necessary, irrespectively of whether the patient comes to him under the terms of this agreement or as a private patient. The agreed scale is based upon the understanding that the dentist shall not be required to accept instalments or to incur the risk of bad debts, and may decline to commence or proceed with the work until he has received the proportion of the cost payable by the member. Any society which does not undertake liability for the full cost of dentures shall make this position clear to its members by an appropriate notice upon its dental letter. Other conditions binding on the dentist are these:—

Bands, wires, and fastenings must be of gold without extra charge.

After multiple extractions impressions for a permanent denture are not to be taken, except with the consent in writing of the approved society, within a period of three months from the date of the final extraction, but when it is necessary to fit dentures before the mouth is ready for permanent work, and the society approves this course, these must be of a permanent character and charged for at scale fees. These and all other new dentures are, if necessary, within 12 months to be remodelled or remade at one-half the original fee. It is understood that any necessary adjustment of the dentures within a reasonable

time after completion will be made by the dentist without additional charge.

The term " root treatment " is understood to mean either of the following: (1) The devitalisation of the pulp of a tooth and the subsequent removal of the pulp followed by the necessary treatment and filling of each root of the tooth. (2) The treatment of septic root canals and subsequent filling of each root. It does not include any dressing or treatment of the pulp of a conservative nature.

The anæsthetist's fee includes the cost of the anæsthetic as well as the cost of its administration. The choice of an anæsthetist will rest with the dentist performing the extractions. The anæsthetist must in all cases of prolonged anæsthesia be either a medical practitioner or a dentist (other than the dentist performing the extractions) skilled in the administration of a suitable general anæsthetic and included in a list to be approved by the Dental Benefit Joint Committee.

A dentist will be required to accept a dental letter only if it is produced to him within 21 days of the date of its issue and within six weeks of the commencement of treatment. He will be entitled to be paid, for such treatment as is then completed, at the original rates agreed upon between him and the patient. For the remainder of the treatment he will be entitled to the scale fees only. If a dental letter is produced either more than 21 days after the date of its issue, or more than six weeks after the commencement of treatment, the dentist will be entitled, if he so desires, to be paid for the whole of the treatment at the fees originally agreed upon. In order to avoid subsequent difficulties, the dentist before arranging on the occasion of a patient's first visit to charge on the basis of his private fees, should endeavour to satisfy himself as to whether the patient is or is not an insured person.

If a dentist is unable for any reason to complete the treatment authorised in respect of any insured person, he should notify the society concerned of the amount of treatment completed, of any payment already made by the insured person, and of the reasons for his inability to complete the remainder of the treatment.

If any doubt arises as to the correctness of interpretation of the scale of dental charges, the matter should be referred to the Secretary of the Dental Benefit Joint Committee, Ministry of Health, Whitehall, London, S.W. 1.

In the case of unforeseen conditions or unforeseen developments arising during treatment after diagnosis and acceptance of the estimate, the dentist may submit an additional estimate.

When any estimate has been submitted to an approved society and the society has questioned it, there shall be provision for an appeal by either party to a professional referee or committee to be recognised by the Dental Benefit Joint Committee.

The specification of materials to be used in work for members of approved societies provides that filling material is to be of first-grade quality manufactured by the best-known manufacturers and suitable for each individual cavity. In prosthetic work it is laid down:—

In vulcanite work, if pin teeth are used, all pins to be of (*a*) platinum, (*b*) nickel gold-cased, or cased with other precious metal, or (*c*) nickel alloy gold-cased, or cased with other precious metal, such as are made by the best-known manufacturers. Pins, gold or platinum, sheathed (i.e., anchored) within the porcelain, are permissible. If diatorics are used for anterior teeth, they are only to be used in cases where artificial gum is necessary and the upper anterior teeth must be wired in. All vulcanite partial cases must be sufficiently rigid. Metal strengtheners must be compatible with vulcanite and not liable to corrode in the mouth. Where gold has to be used for dentures by special estimate, it must not be less than 16 carat and must be of adequate strength. Bands and wires to be of not less than 16-carat gold, and bands to be not less than 7 gauge.

CALEDONIAN MEDICAL SOCIETY.—The annual meeting of this society was held at Storrs Hall Hotel, Windermere, on Sept. 24th. Dr. W. E. Henderson, the President, M.O.H. for Westmorland, delivered an address on the Historical and Literary Associations of Westmorland to a large audience. Sir Robert Jones, of Liverpool, and Sir Samuel Scott, High Sheriff of Westmorland, were elected honorary members, the annual dinner being held in the evening. The 1927 meeting is to take place at Dundee under the presidency of Dr. Angus MacGillivray, while in 1928 the society will celebrate its jubilee at Edinburgh under the joint presidency of its founders, Dr. S. Rutherford Macphail and Dr. W. A. Macnaughton.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Courses for Health Visitors.

LAST year the Scottish Board of Health arranged some four courses of lectures, demonstrations, and special visits for the health visitors of Scotland. A course was conducted in each of the four large cities. The educational value of post-graduate training is much higher than that of primary courses, since, to use a term less common than it used to be in psychology, the post-graduate's apperception masses are greater and better organised when, through experience, the weak points in his or her knowledge have been discovered. The functions of the health visitor are so novel and have developed at such a pace within the last ten years that most of those appointed in the earlier stages of the child welfare movement welcome the opportunity of seeing the great new developments at the city centres, and last year local authorities gave the movement their cordial support. The attendance was considerable, but it was felt that four such courses were rather more than the circumstances justified, and the Board has now decided that requirements will be met by courses held in the autumn and spring at either Aberdeen, Dundee, Edinburgh, or Glasgow. Local authorities may pay to their health visitors the fee for the course, travelling expenses (third class), and subsistence not exceeding £7 for the period. This expenditure ranks against the maternity and child welfare grant, or, in the case of whole-time tuberculosis nurses, against the tuberculosis maintenance grant. Since in Scotland the local education authority is an ad hoc authority, these two grants cannot apply to the school nurses, but the Board is " prepared to approve the attendance of school nurses at such refresher courses as part of the Education Authority's scheme for school health administration," and in this way the whole ground is covered.

It may be added that the Scottish National Association for Health Visitors, Women Sanitary Inspectors, and School Nurses is a thriving body. At its annual meeting some special subject—for example, ultra-violet light or venereal diseases—is discussed by a group of experts, and the Association is entertained every year by some local authority. In this way both the health interest and the administrative interest are kept in touch.

Nursing in Scottish Health Administration.

To a booklet issued by the Alexandra Memorial Fund Sir John Gilmour, Secretary of State for Scotland, contributes an article on the Place of Nursing in Scottish Health Administration. He states that for health visiting in maternity service, child welfare, tuberculosis, school nursing, and combinations of these, the Scottish local authorities (town and county) employ about 430 whole-time trained health visitors. There are also about 400 part-time official health visitors, or part and whole-time school nurses. He emphasises strongly the need for special social training along the lines followed at the Edinburgh University School of Social Study and Training. Courses on similar lines are being organised in Glasgow. It is now fully recognised by medical officers and local authorities alike that a nurse's training, indispensable as it is, is somewhat too restricted for the full development of a health visitor's work. In the cities, of course, there is always a preference for whole-time officers, but in the counties the large federations of county associations are coming into greater favour.

Women Citizens and Health Work.

The Edinburgh Women Citizens Association is one of the most active educational bodies in Scotland. For the coming winter some 80 lectures have been arranged, as well as visits to civic institutions and industries. Some of the lectures are public, others are given at special study circles and are paid for by fee. Such subjects as mental deficiency and maternal

morbidity are considered by study circles and general public meetings are devoted to discussions on juvenile delinquency, the milk-supply, the hospital patient, and like topics. The public meetings are usually very well attended and the study circles are said to be well maintained. Certainly the efforts of the women to educate themselves in the social aspects of medicine are receiving every encouragement from specialists, both clinical and administrative.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

The Condition of County Hospitals.

Dr. Brendan MacCarthy, one of the medical inspectors of the Department of Local Government and Public Health, has recently made a tour of inspection of the county hospitals of some of the counties of Leinster and Connaught, and has written a devastating report of the conditions of the hospitals in counties Longford, Leitrim, and Roscommon. In the Longford hospital he found the instruments rusty, the glasses broken, the water-supply and sanitary arrangements bad, medical stores in disorder, clothes caked with dirt, beds unmade, and floors blue-moulded. "It would be difficult," he says, "to exaggerate the conditions of disorder and neglect which were to be seen everywhere. . . . The conditions of the institution threatened the lives of the patients who came in for treatment." In the district hospital at Carrick-on-Shannon, co. Leitrim, he found no disinfecting apparatus, no provision for coping with fire, a primitive laundry with no heat for drying, and only one bath, that being on the top floor. In Roscommon surgical hospital "the cleanliness was bad," the cooking arrangements were poor, hot water was not obtainable, and there was no disinfecting apparatus. The clothes came home from the wash dirty and torn. The conditions of these hospitals comes as a shock and a disappointment to those who had accepted the statements made by the Department of Public Health and Local Government that the county hospitals were organised to meet the normal requirements of a county in regard to hospital treatment, and were provided with all necessary scientific equipment. To make matters worse, in two of the counties reported on, the local authorities had been superseded by commissioners appointed by the Minister for Local Government and Public Health, and the responsibility for the scandalous state of the hospitals cannot, therefore, lie with the local authorities. Up to the present the system of administration by commissioners had commended itself to the public on grounds both of efficiency and economy, but these reports will give it a set-back.

Public Health Appointments in Cork.

The resignation is announced of Dr. Denis D. Donovan, who has been superintendent medical officer of health for the city of Cork for more than 40 years past. Dr. Donovan was not a whole-time medical officer of health, but a physician in busy practice, and there is now an opportunity to organise a system of health administration for the city under the charge of a whole-time medical officer. Cork is the second city in the Irish Free State, with a population of 78,468. Its death-rate last week was 21·9 per 1000 per annum. It is clear that such a city affords ample scope for the services of an expert sanitarian. Unfortunately, the commissioner administering the city takes another view, and he proposes to appoint a person to the combined office of medical officer of health and tuberculosis officer at a salary of £800 a year, rising to £1000. The salary is, of course, inadequate, and the proposal to combine public health and clinical duties is bad in principle.

The Medical Register.

The Executive Council issued a further order last week continuing the present system of medical registration for another month.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Infectious Diseases in Germany.

According to statistical records the number of deaths from puerperal fever has risen from 6935 in 1924 to 7005 cases in 1925. The incidence of hydrophobia shows a decrease from 48 to 20, the suspected cases having fallen from 2417 to 1160. Encephalitis lethargica has been diagnosed in 217 cases, against 156 last year; and trachoma in 2777, against 1809, the cause of the last-named increase being that agricultural labourers coming from the East have conveyed the infection to Germany. Infantile paralysis had decreased from 507 to 387 cases, the majority occurring in September, the smallest number in January. It would seem, however, that this disease again shows a tendency to spread; cases are reported from many places, and some schools are being closed.

The Cinema and the Child.

The influence of the cinema on the child described in the report of Dr. Newsholme, quoted in your issue of August 21st, has also been observed in Germany. In some cases a visit to a film featuring crime has been held to have instigated the child to wrong-doing. According to the present law in Germany, children under 16 years of age are not admitted to cinemas. Exceptions are granted only for selected performances—for example, humorous episodes or films of historical character, where neither cruelty nor battle, nor dominance and submission are represented. When the film control office has granted permission to admit children to any performances, the programme and advertisements must bear the words, "children admitted," otherwise entrance is refused.

QUEEN ALEXANDRA SANATORIUM FUND.

THIS Fund in its report for 1925–26, just issued, points out that for several years the policy of the Council had been to engage the whole of the rooms at a pension at Davos for the winter months, and to concentrate there all the patients helped by the Fund. This arrangement gave the patients the advantage of the society of a number of their own countrymen and women, while their supervision by the visiting physicians was easily arranged for. It was, in fact, the nearest approach possible to a British sanatorium on the old lines. While Davos was still only recovering from the depression caused by the war, an arrangement of this sort was welcomed by pension proprietors, who were assured of a full house. But with the return of prosperity, the terms the Fund could offer ceased to be attractive, and a new system had to be devised. In theory there were two possibilities, either to hire vacant premises and equip and staff them, a course full of financial and administrative difficulties, or to give up trying to keep the assisted patients together, and to allow them, within limits, to choose their own pension or sanatorium. As no premises were forthcoming, force of circumstances led to the adoption for 1925–26 of the simple £2 a week grant system. This amount was made up of the old allowance towards board and lodging of Frs.35 per week, with an additional Frs.15 per week for treatment expenses. The new scheme proved popular with the patients, as they were no longer known as "fund" or "institution" patients. While the advantage of unified supervision and control which concentration in one building would offer, was missing, there occurred no serious failure to carry out strictly the prescribed régime. Of the 26 patients, 9 were in sanatoriums, the remaining 17 in 7 other approved buildings. All except 1 remained in Davos till the end of April, when the grants terminated. Disease was arrested in 2 cases, much improved in 12, and improved in 12. Four cases were treated with tuberculin injections, 3 by artificial pneumothorax, 5 had light treatment. There was 1 case of tuberculous peritonitis and 1 of intercurrent appendicitis. The number of inquiries about the Fund and of applications increases each year, and shows that there is a real need of assistance in some such form. Many persons cannot afford to go to Davos without some help, and the Fund has been instrumental in bridging over the difference between possibility and impossibility in nearly all the cases which have come under its operations. The London address of the Fund is Mr. D. Vesey (hon. secretary to the Council), 97, Warwick-road, Earl's Court, London, S.W. 5, and the local secretary is Mr. C. Healy, Davos Platz, Switzerland.

Correspondence.

"Audi alteram partem."

REFORM IN MIDWIFERY.

To the Editor of THE LANCET.

SIR,—I have been greatly interested in Prof. G. W. Theobald's plea for reform in the teaching of midwifery for students of medicine, and as a general practitioner of an experience of over 2500 maternity cases in private practice, I am giving the result of my own experience during many years in the practice of midwifery. In the first 1500 consecutive cases I tabulated my clinical observations with the object of elucidating the cause of sex, and since then midwifery has been the subject of my choice.

I think I can fairly say that among the 2500 cases every conceivable difficulty in delivery has been presented to me. I have managed every case alone, and on only three occasions did I call in another practitioner to give the anæsthetic to help me to deliver. None of my mothers died as the result of parturition although a stillbirth occurred occasionally, due to other causes. Miscarriages and abortions I pass over. Strange to say, the very first case in my own practice, although a natural delivery of a living child which is alive now, the mother, a syphilitic, died six weeks after delivery of meningitis. I had three cases of Cæsarean section, mothers alive now; one case of diabetes mellitus, when the mother, aged 35, died from that disease, the child being alive; one case of macrocephalon, the fœtus being dead but the mother alive; and a few cases of placenta prævia, mothers doing well.

Without going into any details as regards my own experience, my object is to endorse Prof. Theobald's plea for a reform in the method of teaching students in midwifery. No teaching is of practical use unless the student is required to spend the time necessary in practical midwifery to enable him to observe the cases as they occur under skilled guidance by a teacher in obstetrics. He will learn to observe the natural phenomena of labour, to be patient until action is required, and then to act with acquired professional skill. He will hesitate with both digital as well as instrumental interference, and probably save valuable lives. Nature in labour works aseptically and contamination by external interference must be prevented. Digital examination must be strictly aseptic and abdominal palpation is most valuable as a guide. I can strongly recommend to the student to either do practical midwifery under guidance at a maternity hospital or to assist a general practitioner in a large practice as I did. Theory alone is not sufficient; he gets plenty of instruction from his teachers. When I was a student I attended 250 maternity cases before I did any hospital work, and I feel glad that I did. Midwifery in the hands of insufficiently trained nurses should not be permitted and the expulsion of the placenta by them strictly forbidden. In skilled professional hands I advocate the judicial expulsion by manual pressure on the abdomen. As for binding the mother after delivery, I think that, generally speaking, it need not be done, but in cases of excessive abdominal distension before labour binding up is to be preferred. As to laceration of the perineum, I think the doctor can do a good deal to prevent it by bimanual pressure on the perineum at the time of delivery of the head. In all my cases I scarcely remember using the long forceps; I always use the short. I happen to be intimately acquainted with surgical instruments, their history, and their use, and this knowledge is the very reason why I hesitate to use them until expediency demands. In protracted labour I give morphine and atropine sulphate by the sublingual method direct. No hypodermic injections. Scopolamine I have not tried. Under proper circumstances a whiff of chloroform is much appreciated by the parturient woman, and it has the advantage of hastening labour. In an occipito-posterior presentation I do not think it good practice to turn it by means of the forceps into an anterior one. Although the man I worked under did this before my eyes, and showed me how to do it, I have never done it in any of my own cases. Asepsis during labour is most essential.

I had the honour of being taught by Lister himself, whose in-patient dresser I was, and I have always strictly observed antiseptic precautions. My finger-nails are cut very close, and my hands never touch the patient unless they are sterilised. Gloves I only use in suspicious cases. I do not agree with examining the patient per rectum in order to observe the progress of labour, but I give a strong aperient to clear the bowel and perhaps use a catheter before labour has advanced. If a douche is required I always use the biniodide of mercury and potassium 1 : 1000.

In all my cases I have only troubled the maternity institution with my three cases of Cæsarean section and one case of perforation. Speaking of these urgency operations, I think there should be cordial relations between the maternity institution and the general practitioner, and while this has been the case with all institutions, not maternity, with which I have been in contact, I could point out one or two where such cordiality has been completely absent.

I am, Sir, yours faithfully,

A. P. MURTZ, L.M.S.S.A., L.S.A.

Finsbury Park, N. Sept. 26th, 1926.

THE RIGHTING REFLEXES IN ENCEPHALITIS.

To the Editor of THE LANCET.

SIR,—The Cameron prize lectures, delivered by Prof. Rudolph Magnus and just published in your columns, are of the greatest interest and importance. Those of us who during the past four years have had an opportunity of hearing the addresses by Prof. Magnus on this subject have been impressed by the enormous amount of careful and brilliant work which forms the basis of his excellent addresses. The righting reflexes appear from clinical observations to be of considerable importance in man in whom the development of the erect posture has apparently caused certain slight alterations in these reflexes.

In confining himself to the subject in hand Prof. Magnus does not stress the importance of these reflexes either in the normal man or in the pathological states. The righting reflexes in man, in so far as they are shown in the neck muscles, can be very easily demonstrated if, on placing a hand anywhere at the level of the scapulæ, we give a person a push in a forward or backward direction. It is then seen that the head carries out a rapid movement in such a direction that the centre of gravity, if the push is a mild one, is instantly brought back to the normal. After this the shoulders, body, and head return relatively slowly to the normal posture and equilibrium. The same can be demonstrated for sudden lateral movement if the patient is standing on one foot. If we are testing the righting reflexes by causing a forward movement of the trunk, we stand behind the patient and can see the posterior muscles of the neck carry out a typical contraction which is apparently of reflex origin. In certain pathological states this reflex may be lost or impaired, and various degrees of loss or impairment may be observed in post-encephalitic manifestations. In the post-encephalitic the mental changes are in the majority of cases the most disabling, but the loss of the righting reflexes produces very great disability in that this loss appears to be one of the most important factors in the impairment of coördinated automatic movements such as walking, and particularly in any movement which demands sudden change of direction.

The work of Rademaker which Prof. Magnus quotes shows that the righting reflexes are lost if a section is made through the mid-brain of an animal behind the third nerves, and he regards the red nuclei as the centre of origin for the righting reflexes. Partial

destruction of centres which have been demonstrated to have important efferent paths which are afferent to the red nucleus or of the red nucleus itself have been shown to be constantly present in encephalitis lethargica. There is thus evidence that in encephalitis the loss of the righting reflexes is determined by impairment of the function of the red nucleus. Rademaker points out that the rubro-spinal tract is probably the efferent path from the red nuclei. During the last year and a half I have had an opportunity of examining something over 70 cases exhibiting the post-encephalitic state, and I have found that in all of them the righting reflexes are either impaired or absent.

Led by these considerations I have endeavoured by special exercises to restore the impaired righting reflexes in these cases, and was astonished to find that with such training the righting reflexes reappeared, and I think that I may go as far as to say that the post-encephalitic improved both subjectively and objectively in proportion to the degree of reappearance of his righting reflexes. The only explanation that has occurred to me is that alternative paths can by re-education be brought to function in relation to the red nucleus. The post-encephalitic forms the most interesting study of neck reflexes in man that I have encountered, but altered righting reflexes are also found in cases of labyrinthine disturbances and in other conditions. A cinematograph film of the exercises for retraining the righting reflexes in post-encephalitics has been prepared.

Finally I wish to make it clear that any observations that I have been able to make are entirely dependent upon the data which, as a result of his researches, Prof. Magnus has brought forward in his addresses, and I am indebted to Dr. P. C. P. Cloake and Dr. G. Eden, of the Nerve Hospital, Birmingham, for much valuable assistance in dealing with the neurological problems involved. I am, Sir, yours faithfully,

A. LOWNDES YATES.

Newhall-street, Birmingham, Sept. 26th, 1926.

STRETCHING THE INTUSSUSCIPIENS.

To the Editor of THE LANCET.

SIR,—In the encouraging article on intussusception by Mr. Hamilton Bailey in your last issue I note that he obtains help by Daw's method of stretching the intussuscipiens by forceps. There can be little doubt that reduction is often facilitated and resection avoided by some such method. In dealing with friable and œdematous tissues, however, the finger is a very safe and convenient instrument. By inserting the little finger between the entering and returning layers of the intussusceptum the surfaces can be separated and the œdematous fluid expressed out of the returning and ensheathing layers. I think if this method were used resection would be less often needed. I described and illustrated this method in the *British Journal of Surgery*, Vol. IX., p. 558.

I am, Sir, yours faithfully,

Harley-street, W., Sept. 26th, 1926. ZACHARY COPE.

"MICROBE HUNTERS."

A PUBLIC DENIAL.

To the Editor of THE LANCET.

SIR,—Our attention has been drawn to a book called "Microbe Hunters," recently published by Harcourt, Bruce and Company, New York, and alleged to have been written by one Paul de Kruif—a gentleman whose name is quite unknown to us. The work evidently aims at being a kind of popular history or rather romance regarding medical discovery, and mentions us among others. We should like an opportunity to say, for the information of your readers, that the author's statements about ourselves and our researches are almost entirely apocryphal; that they are not supported by reference to the original literature; that they are clearly derived almost only from his own imagination or from spurious prompting by others; and that his knowledge of the subjects with which we have been concerned is obviously incomplete.

We have been legally advised that some of his assertions regarding ourselves are libellous according to British laws, but in America we have no means of protection except a public denial of the truth of his allegations, and we therefore trust that you will allow us to publish such a denial, as emphatically as we may, in your columns.

Dr. Cuthbert Christy's signature does not appear on this letter as he is in Africa; before sailing, however, he left us the following statement: "With regard to Chapter IX. of Paul de Kruif's book, 'Microbe Hunters,' I beg to emphatically state that it contains statements which are totally erroneous, misleading, and some of them libellous. As an example I will quote paragraph 2, page 264, which reads: 'The third member (viz., myself) became disgusted with the ignorance and failures of his two colleagues and went off prospecting for rubber . . .' This paragraph is absolutely untrue and libellous. I never abandoned my colleagues, and, as a matter of fact, I did not get interested in rubber until 1906, which was three years after the labours of the First Sleeping Sickness Commission were completed."

We are, Sir, yours faithfully,

ALDO CASTELLANI. DAVID NABARRO.
GEORGE C. LOW. RONALD ROSS.

Sept. 27th, 1926.

HELIOTHERAPY IN PULMONARY TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—Dr. Chandler's letter in your issue of Sept. 11th (p. 574) advances a reasoned plea in favour of an extended trial of heliotherapy in pulmonary tuberculosis. In the light department of the Royal Free Hospital we have been giving ultra-violet light treatment to cases of active and quiescent pulmonary tuberculosis not only without harm, but with considerable benefit to the majority. These favourable results have not been secured without "buying our experience." For instance, in one case, a patient who had had a persistent backache following an injury, was freed from this pain by one strong erythema dose only to fall a victim to a serious flare up of an old (and unsuspected) pulmonary lesion.

As far as our present experience goes ultra-violet light can be safely given to cases of pulmonary tuberculosis if the following rules be observed.

1. That the initial dose should be one-quarter of the dose that will give the patient an erythema at 20 in., as tested by the "spot" method on the forearm.

2. That this quarter dose be secured by the appropriate increase of distance and not by a diminution of time.

3. That the skin first exposed be the legs and that a gradually increasing area of skin be added day by day. This being the only increase in dosage until the whole body is receiving this quarter erythema dose.

4. That subsequent increase in dosage be obtained by increasing the time of exposure with little or no diminution of the distance.

An accurate record of the weight and morning and evening temperature of these cases should, of course, be kept. In some way which I do not, as yet, understand, certain cases respond better to doses of ultra-violet light from a distance (and among these are cases of pulmonary tuberculosis) than to precisely the same dose, calculated on the inverse square law, when given close to the patient. I should be glad to know whether any of your readers have formed the same opinion from their clinical experience as regards this physical law not being strictly applicable to patients. I am, Sir, yours faithfully,

Park-crescent, W., Sept. 25th, 1926. C. B. HEALD.

PASTEURISATION OF MILK.

To the Editor of THE LANCET.

SIR,—I read Dr. Moore's letter with regret, as I had hoped we were in for a reaction against artificial interference with Nature. Dr. Moore asks for a specific case of the "deplorable results" of sterilised milk. Living in an out-port in China, my little girl was fed on an expensive brand of sterilised fresh milk supplied by a well-known firm; she developed scurvy and paralysis, which was cured by orange juice, raw meat juice sent from Shanghai, and milk supplied by a dirty Chinese from a more or less dirty goat. People to-day seem to forget that the marvellous human system is supplied with means to cope with a certain amount of poison. I have never lived in big cities, but in those places I have been we have never found it necessary to sterilise milk. As to the closing question "if we may cook most foods, why may we not cook one particular food?" surely Dr. Moore has not been reading his LANCET. One case reported there will suffice for many. Two Indian regiments suffered much from beri-beri; it was found that their vegetables were cooked too much; when the amount of cooking was reduced the nerve symptoms ceased. Is it not a recognised fact that the nearer we get to Nature the healthier we are?

I am, Sir, yours faithfully,

C. G. S. BARONSFEATHER.

Bournemouth, Sept. 25th, 1926.

Obituary.

WILLIAM EDWARD MARSHALL, *M.C.*, M.B., CH.B. EDIN., D.P.H.

NEWS has reached this country of the death at Khartoum on Sept. 24th of Major W. E. Marshall, who had only ten days previously taken up his new appointment of Principal Medical Officer, Sudan Defence Force. His death at a comparatively early age removes an officer of proved capacity in the many spheres in which his lot was cast and one who by his unfailing cheerfulness and resource had endeared himself to all with whom he came in contact.

Marshall was a native of Perth and graduated in medicine at the University of Edinburgh in 1902. He was appointed an assistant in the Bacteriological Department of the Lister Institute, London, in 1905, and in the three years during which he held this post he made a number of valuable contributions to bacteriological literature. In 1908 he entered the Royal Army Medical Corps, being attracted by the facilities that service might afford to one possessing his laboratory training combined with a very definite leaning towards the clinical side of medicine. From 1909 to the outbreak of war he was more or less continuously resident in the Sudan, and was largely occupied in the investigation of kala-azar in the region of the Blue Nile. During the war he served in Egypt and France, and in the Hedjaz, where he came into intimate personal contact with Colonel Lawrence and other notables of that picturesque campaign. He was again seconded for service in the Sudan in 1919, and in 1921 his special and sympathetic knowledge of local conditions, language, and people led to appointment as British Agent and Consul at Jeddah, where he successfully combined the duties of physician, administrator of quarantine, and political agent. He returned to this country in 1923, and until a few weeks ago was pathologist at Netley. It was apparent, however, that the spell of Arabia and Egypt clung to him in his post at home and it was with great eagerness that he looked forward to a further sojourn in the Sudan—a sojourn which has proved so brief.

Marshall was unmarried. He leaves behind him a pleasing memory of cheerful and unselfish devotion to duty and the ties of friendship.

Medical News.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—A special demonstration on common injuries of the eye will be given by Mr. W. H. McMullen at the Royal Westminster Ophthalmic Hospital on Friday, Oct. 8th, at 5 P.M. This will be open to members of the medical profession without fee. A series of Fellowship lectures on emergencies in medicine and surgery will begin on Thursday, Oct. 14th; they will be given at 5 P.M. in the lecture-room of the Medical Society of London, 11, Chandos-street, W.; the full programme may be had on application. The Central London Throat, Nose and Ear Hospital will hold an intensive course in laryngology, rhinology, and otology from Oct. 4th to 23rd. The clinical course may be taken in conjunction with the operative, or separately, but early application is requested for the operative course as the entry is limited. (Fees, 5 guineas and 7 guineas.) From Oct. 18th to 30th there will be an all-day course in diseases of children in which the staffs of the Paddington Green Children's Hospital, the Victoria Hospital for Children, and the Children's Clinic will take part. Beginning on the same day there will be a two weeks' course in gynæcology at the Chelsea Hospital for Women. A two weeks' course in genito-urinary diseases will start on Oct. 18th at St. Peter's Hospital; there will be clinical work, including cystoscopies, every afternoon, as well as lectures. A series of eight clinical demonstrations of tropical diseases will be held twice weekly at 2 P.M., beginning on Oct. 5th, at the London School of Hygiene and Tropical Medicine. Copies of all syllabuses, of the General Course Programme, and of the *Post-Graduate Medical Journal* may be had from the Secretary at 1, Wimpole-street, London, W. 1.

HEALTH WEEK.—The committee appointed by the Royal Sanitary Institute has organised a Health Week from Oct. 3rd to 9th. More than 50 cities and towns are taking the opportunity to emphasise the importance of health problems and arouse the interest of their citizens in personal and social hygiene.

POST-GRADUATE COURSE AT ST. MARY'S HOSPITAL. During the week-end Oct. 2nd to 4th, a course for medical practitioners will be held at St. Mary's Hospital, Paddington, as follows:—Saturday: 10 A.M., Prof. C. A. Pannett, Acute Intestinal Obstruction; 10.45 A.M., Prof. F. H. Langmead on Mental Deficiency in Children; 12 noon, Mr. S. Maynard Smith, Errors in Surgical Diagnosis; 2.15 P.M., Mr. Zachary Cope, Common Fractures and Common Sense; 3.15 P.M., Mr. Aleck Bourne, the Scope of Cæsarean Section. Sunday: 11 A.M., Mr. R. M. Handfield-Jones, Common Surgical Problems (cases); 12 noon, Dr. C. M. Wilson, New Methods and Old Maladies (cases). Monday: 10 A.M., Mr. C. W. Gordon Bryan, Diagnosis of Some Disorders of Joints; 10.45, Dr. Reginald Miller, the Rheumatic Problem in Children; 12 noon, Sir William Willcox, Enteric Infections; 2.15 P.M., Mr. T. G. Stevens, Radium in Gynæcology; 3.15 P.M., Dr. A. F. Hurst, New Applications of Some Old Remedies. These meetings will be held in the library of the Medical School, and are open to all medical practitioners without fee.

LECTURES ON CHILD WELFARE AND CARE OF INFANTS.—A special refresher course of lectures on child welfare for health visitors, nurses, midwives, and others, will be held at the City Hall, Cardiff, on Saturdays, from Oct. 2nd. to 30th. The lecturers will be Dr. J. S. Fairbairn, Lady Barrett, Mr. W. Kittow, Dr. Eric Pritchard, Dr. J. C. Gilchrist, Dr. Ralph Picken, and Dr. Letitia Fairfield. The fee is 10*s.* 6*d.* for the whole course or 1*s.* 6*d.* for single lectures, and application for tickets should be made to the hon. secretary of the National League for Health, Maternity, and Child Welfare, 117, Piccadilly, London, W. 1, or to Dr. Picken, City Hall, Cardiff.—A course of post-graduate lectures on Infant Care, for health visitors, nurses, midwives, superintendents of welfare centres, and others will be given at the Infants Hospital, Vincent-square, Westminster, on Mondays, Oct. 4th to Dec. 6th, from 6.30 to 7.30 P.M., the lecturers being Dr. Margaret Lowenfeld, Dr. Donald Paterson, Dr. Eric Pritchard, Dr. W. E. Robinson, Dr. Margaret Emslie, Dr. A. F. Tredgold, and Dr. F. J. Poynton. Fees: whole course 7*s.* 6*d.*, single lectures 1*s.* Particulars may be had from the secretary, National Association for the Prevention of Infant Mortality, 117, Piccadilly.—A course of elementary lectures on Infant Care especially intended for creche nurses and probationers will be given by Dr. Prudence Gaffikin, at 117, Piccadilly, on Thursdays, Oct. 14th to Dec. 16th, at 7.30 P.M. Tickets (whole course, 10*s.* single lectures 1*s.*), may be had from the secretary of the association at the same address.

UNIVERSITY OF LONDON.—A course of eight lectures on the Special Senses will be given at University College by Dr. R. J. Lythgoe on Mondays and Wednesdays, beginning on Oct. 4th, at 5 P.M.—A course of ten lectures on Histology of Nerve Tissues and Paths of Conduction in the Central Nervous System will be given by Dr. C. Da Fano at King's College, on Thursdays, beginning on Oct. 7th, at 5 P.M.—A course of eight lectures on Biological Oxidation-Reduction will be given by Mr. R. K. Cannan at University College, on Fridays, beginning on Oct. 8th, at 5 P.M. Admission to these lectures is free, without ticket.

University of London: University College. — Dr. L Reuvid and Dr. E. R. P. Williams have been appointed demonstrators in anatomy, and Mr. L. E. Bayliss Sharpey Scholar in Physiology for the coming session.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—On Wednesday next, Oct. 6th, the inaugural sessional address to the Society will be delivered by Dr. James F. Tocher, B.Sc. Aberd., F.I.C., who will be presented on the occasion with the Pereira Medal, a silver medal provided and endowed out of the proceedings of a fund raised by subscription in 1853–54 as a memorial to Dr. Jonathan Pereira, M.D., F.R.S., a former professor of materia medica of the Pharmaceutical Society. The promoters of the fund resolved "that the medal should be awarded as a prize for researches or proficiency in materia medica," and the medal is presented annually for competition among the students in the advanced course in the Society's school. The medal was won this year by Mr. John George Jones.

MEDICAL DEFENCE UNION.—The annual general meeting was held on Sept. 23rd, when the President, Sir Herbert Waterhouse, moved the adoption of the annual report, which has already been referred to in THE LANCET (Sept. 25th, p. 663). In the course of his address he stated that the Council had decided to afford protection to members against whom actions were brought in consequence of the acts or omissions of locum tenents who were not members of a defence society, and had made a reciprocal arrangement with the London and Counties Medical Protection Society about such actions. The report of the Council and the financial statement for the year 1925 were adopted unanimously. Mr. W. T. Lydall, Mr. R. F. Jowers, and Dr. Seymour Taylor were unanimously re-elected members of the Council.

PEOPLE'S LEAGUE OF HEALTH.—The League has arranged a course of eight lectures on the Mind and What We Ought to Know About It, which will begin on Nov. 1st and continue on the following Mondays at 6 P.M. Among the lecturers will be Dr. E. Mapother, Dr. H. Crichton-Miller, Sir Maurice Craig, Sir Robert Armstrong-Jones, and Dr. A. F. Tredgold. A second course to be held on Nov. 3rd and the six Wednesdays after it, will deal with Diet: What We Should Eat and Why; among the lecturers will be Dr. Harry Campbell, Dr. Leonard Hill, Prof. Winifred Cullis, and Prof. W. E. Dixon. All the lectures will be held at 6 P.M. in the rooms of the Medical Society of London, 1, Chandos-street, W. 1. A fee of 10*s.* will be charged for the first course and a fee of 7*s.* 6*d.* for the second. For tickets and other particulars application should be made to Miss Olga Nethersole, at 12, Stratford-place, London, W. 1 (Tel.: Mayfair 0386).

OPENING OF THE MEDICAL SCHOOLS.—The following arrangements have been made in connexion with the opening of medical schools:—

Charing Cross Hospital.—Distribution of prizes by Field-Marshal Sir William Robertson, Wednesday, Oct. 6th, at 3.30 P.M., in the Out-patients' Hall of the Hospital. Annual dinner of past and present students on the same day at 7 for 7.30 P.M., at the Hotel Victoria, Northumberland-avenue.

University of Durham.—At the opening of the winter session of the University of Durham College of Medicine, Newcastle-upon-Tyne, an introductory address will be given by Dr. Charles Oliver Hawthorne, in the Examination Hall of the College, on Friday, Oct. 8th, at 4.30 P.M.

Guy's Hospital.—Distribution of prizes and an inaugural address by Dr. John Fawcett, Tuesday, Oct. 5th, at 3 P.M.

London Hospital.—Annual dinner of past and present students, Thursday, Oct. 21st, at the Trocadero Restaurant, at 7.30 for 8 P.M.

St. Mary's Hospital.—Annual dinner of past and present students, Monday, Oct. 4th, at 7 for 7.30 P.M., at the Connaught Rooms, Great Queen-street, W.C.

St. Thomas's Hospital.—Annual dinner of old students on Friday, Oct. 29th, at 7.30 P.M., at the Hotel Victoria, Northumberland-avenue.

ST. MARK'S HOSPITAL.—The festival dinner of the hospital will be held at the Mansion House on Tuesday, Oct. 26th, at 7 for 7.30 P.M.

NATIONAL INSTITUTE FOR THE DEAF.—Mr. C. M. R. Balbi, Associate Member of the Institute of Electrical Engineers, has been appointed honorary consultant to the Institute.

NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.—The office of the Association has removed from 20, Hanover-square, London, W. 1, to 19, Tavistock-square, London, W.C. 1 (Telephone: Museum 2577).

QUEEN MARY'S HOSPITAL FOR THE EAST-END.—A new block is to be erected that will give 24 additional beds, house the whole of the office staff, and provide a new board room and committee rooms. The cost will be between £30,000 and £35,000.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL.—Dr. Logan Turner, President of the Royal College of Surgeons of Edinburgh, will deliver an address on Some Aspects of Intracranial Infection of Nasal Origin at the opening of the winter session of the hospital on Friday, Oct. 15th, at 4 P.M.

NEUROLOGICAL CONFERENCE AT OSLO.—The Third Scandinavian Neurological Congress was held in Oslo on Sept. 17th and 18th under the presidency of Prof. Monrad-Krohn. The first day was devoted to reports and communications on neurosyphilis, and an interesting communication was read by Dr. Dahlström, who said that metalues was exceedingly rare amongst patients treated according to the principles of the late Prof. Boeck, of Oslo, an antimercurialist. On the second day Dr. Gundersen, of Oslo, raised the question of a possible close relation of epidemic encephalitis to epidemic parotitis. From epidemiological observations in Norway he showed the probability of a very close connexion between the two diseases. Prof. F. Henschen discussed the physiology of binocular vision, and in another communication pleaded the necessity of assuming the existence of an agraphic centre. Dr. Hansen related observations of a disease which he considered to be identical with Huntingdon's chorea and claimed that this disease was observed and described by a local practitioner in Norway long before Huntingdon. It was decided to hold the Fourth Neurological Congress at Helsingfors in 1929.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

PARLIAMENT reassembled on Monday, Sept. 27th, in order to renew the Regulations under the Emergency Powers Act in connexion with the stoppage in the coal industry.

HOUSE OF COMMONS.

MONDAY, SEPT. 27TH.

Hours of Work in Poor-law Hospitals.

On the motion for the adjournment of the House,

Miss SUSAN LAWRENCE said that many boards of guardians were becoming seriously indebted and were coming within the ambit of the Act passed last summer with the result that the Minister of Health could supersede them and administer relief through official nominees. It was therefore important to know on what principles the Minister of Health was administering relief. If, as appeared to be likely, more and more guardians came under the direct control of the Minister it was only reasonable to ask what were the principles upon which he acted. One of the first things which was done in the West Ham Union was to increase the hours of labour in the infirmary from 48 to 56 per week. The people concerned were sick nurses, sick attendants, and other officials of the hospital. Their union approached the nominee guardians and these admitted, according to the union's statement, that it was intended that consequent upon the increase in hours dismissals should take place. Eleven sick room attendants had already been dismissed, and it was anticipated in the locality that more were going. It would be bad enough if this were done in the London infirmaries, but it was much worse in connexion with the West Ham Infirmary for this reason—that in the case of the London infirmaries cancer and venereal disease cases were removed

to the Metropolitan Asylums Board hospitals where there was a 48-hours week. In adopting the 48-hours week the Metropolitan Asylums Board had no doubt borne in mind the notorious fact that there was no nursing so difficult, or which made so great a claim on the attention and physical strength of the nurses, as the nursing of the last stages of cancer cases or venereal disease cases. It was only by constant lifting of these patients that they escaped suffering in a very painful manner, and the first fruits of the model administration by the Minister of Health was just this—that the dying got less alleviation of their pain than formerly. These women and men were only human and they could not put as much work into a 12-hour shift as they did into a 8-hour shift. The nurses were on duty for two 12-hour shifts instead of three 8-hour shifts and with fewer numbers and longer hours it was impossible that the sick could be nursed as well as they were previously.

Mr. LAWSON said that in the coal-fields the situation was terrible. In the Chester-le-Street area, which he represented, gentlemen who were taking charge of affairs were more interested in giving proof of their ability to practise economy than in carrying out the principles of the Poor-law. The reason why the work of the Chester-le-Street guardians was taken over primarily was a dispute as to whether the young men were destitute or not. He thought that the Minister of Health might have done what the Scottish Board of Health did when there was a dispute and they could not get doctors to examine the cases. He might have sent doctors from headquarters in order to settle the question as to whether the men were destitute or not.

Mr. NEVILLE CHAMBERLAIN (Minister of Health) said that he must point out to Miss Lawrence and Mr. Lawson that under the Act passed this summer the present boards of guardians in West Ham and Chester-le-Street were not Special Commissioners, but boards of guardians for those unions—at any rate, for the time being—and the relations between them and the Ministry of Health were precisely the same as those between the Ministry and any other board of guardians. He had no more power over them than he had over any other board.

Mr. LYNN: You choose them.

Mr. NEVILLE CHAMBERLAIN: The hon. Member does not seem to remember the wording of the Act of Parliament. Parliament gave me the power to choose them, but it did not give me the power to dictate their policy. Continuing, the right hon. gentleman said that all he could do if he had a complaint of these guardians' action was to draw their attention to the complaint and to inquire what observations they had to make. That was precisely the course he had taken in the matter of the hours of the infirmary employees in West Ham. A deputation had been received at the Ministry of Health and the statements of the deputation were forwarded to the board of guardians for their observations, which had not yet been received. It was quite untrue to say that the dismissals of these servants were subject to his sanction. If the hon. Member had cases which he thought were cases of hardship or where guardians were not carrying out their duties he asked him to let him have particulars and he would forward them to the board and ask for their observations.

Dr. WATTS said he was continually struck by the objections to putting in more hours of labour on a healthy occupation such as that of mining. Mining was with one exception the healthiest occupation in the country. It was second only to that of the agricultural labourer. If hon. Members doubted that statement he would refer them to the statistics of the Registrar-General. There were very few diseases to which miners were specially prone and they were certainly not fatal diseases.

TUESDAY, SEPT. 28TH.

Boards of Guardians and Relief.

In reply to questions,

Mr. NEVILLE CHAMBERLAIN said that it was not the duty or the practice of boards of guardians to report changes in their administration or scale of relief, which they might use for their guidance, but he had been informed of reductions in scales made since May 1st in 42 instances. He knew of no case where a board of guardians ceased to grant any relief to dependants of those involved in the present coal stoppage, but six boards were reported to have decided that only indoor relief should be granted in these cases. Such a decision was within the discretion of the guardians so far as regarded applications considered by them, but nothing could interfere with the duty of a relieving officer to deal as might be required with any case of sudden or urgent necessity. He had no reason to suppose that boards of guardians were not fully discharging their duties in the matter.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
TUESDAY, Oct. 5th.—5.30 P.M., ORTHOPÆDICS (Cases at 5 P.M.). Mr. Alan H. Todd, Mr. D. McCrae Aitken, and others. Mr. Paul Bernard Roth: Osteitis Deformans Affecting Chiefly the Skull and Pelvis. *Presidential Address:* Dr. W. T. Gordon Pugh: Orthopædics at a Country Children's Hospital (illustrated).
FRIDAY.—5.30 P.M., CLINICAL (Cases at 5 P.M.). Dr. L. S. T. Burrell, Dr. Bernard Myers, Dr. J. H. Sheldon, Dr. C. F. T. East, Dr. Douglas Firth, and Dr. J. L. Livingstone.—8.30 P.M., OPHTHALMOLOGY (Cases at 8 P.M.). *Presidential Address* by Mr. Ernest Clarke. *Epidiascope Demonstration:* Dr. Rayner Batten: Drawings of Macula Colobomata.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, Oct. 4th, to SATURDAY, Oct. 9th.—ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, Charing Cross. Special demonstration on Common Injuries of the Eye, by Mr. W. H. McMullen, at 5 P.M. on Oct. 8th. This demonstration is open to medical men, without fee.—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road. Intensive Course in Clinical Laryngology, Rhinology, and Otology. Operative class also.—LONDON SCHOOL OF TROPICAL MEDICINE, Endsleigh-gardens, N.W. Tues., 2 P.M., Dr. G. C. Low, clinical demonstration. Thurs., 2 P.M., Dr. Manson-Bahr, clinical demonstration. Further information from the Secretary of the Fellowship of Medicine.
POST-GRADUATE HOSTEL, Imperial Hotel, Russell-square.
WEDNESDAY, Oct. 6th.—9 P.M., Sir James Dundas-Grant will open a discussion on Some Clinical Experiences.
THURSDAY.—9 P.M., Mr. Bedford Russell will open a discussion on Tonsillar Remains. All medical practitioners cordially invited.
LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Oct. 5th.—5 P.M., Dr. J. H. Stowers: Introductory Lecture.
THURSDAY.—5 P.M., Dr. J. M. H. MacLeod: Anatomy of the Skin.
HOSPITAL FOR SICK CHILDREN, Great Ormond-street.
THURSDAY, Oct. 7th.—4 P.M., Dr. Cockayne: Rickets as it is seen to-day.
NATIONAL HOSPITAL, Queen-square, Bloomsbury, W.C.
MONDAY, Oct. 4th.—2 P.M., Dr. Hinds Howell: Out-patient Clinic. 3.30 P.M., Dr. Adie: Disseminated Sclerosis.
TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Bernard Hart: The Psychoneuroses.
THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Dr. Martin: Hemiplegia.
FRIDAY.—2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Dr. Symonds: The Pathogenesis and Treatment of Cerebral Vascular Disease.
MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSES.
TUESDAY, Oct. 5th.—4.15 P.M., Dr. F. Craven Moore: Early Diagnosis of Cancer of the Stomach.
FRIDAY.—4.15 P.M., Dr. C. Powell White: Modern Views as to the Cause of Cancer.
ST. MARGARET'S HOSPITAL FOR WOMEN, Acomb-street, Whitworth Park, Manchester.
WEDNESDAY, Oct. 6th.—4 P.M., Dr. N. C. Haring: The Treatment of Consumption in Young Girls.
ANCOATS HOSPITAL, POST-GRADUATE COURSE.
THURSDAY, Oct. 7th.—4.15 P.M., Mr. Harry Platt: Treatment of Common Injuries, Sprains and Minor Injuries of Joints, Muscles, and Tendons.
JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, ST. ANDREWS.
TUESDAY, Oct. 5th.—4 P.M., Dr. A. Maitland Ramsay: Introductory Address: The Muscle of the Heart, the Intestinal Tract, the Iris and the Ciliary Body—an Analogy and a Contrast. Discussion to be opened by Prof. Waterston.

Appointments.

BACK, MARJORIE, M.D. Lond., D.P.H., has been appointed Maternity Doctor under the Swansea Health Authority.
HOWELL, B. WHITCHURCH, F.R.C.S. Eng., Orthopædic Surgeon to St. Michael's Home for Crippled Children, Clacton-on-Sea.
YOUNG, W. A., M.D., Ch.B. Edin., D.P.H. Camb., Medical Officer of Health for Poplar.
Certifying Surgeons under the Factory and Workshop Acts: CHADWICK, J. W., L.R.C.P. Lond., M.R.C.S., Bollington District of the County of Chester; SUMMERHAYES, J. O., L.R.C.P. Lond., M.R.C.S., Newhaven District of the County of Sussex.
Royal Manchester Children's Hospital: STENT, Miss L., M.B., Ch.B., Assistant Medical Officer at Out-patients' Department; BACON, W. B., M.B., Ch.B. Manch., Resident Medical Officer at Pendlebury; SEED, N. F., M.B., Ch.B. Manch., Resident Surgical Officer at Pendlebury.
Salford Royal Hospital: ROANTREE, W. B., M.B., B.Ch., B.A.O. Dub., House Physician; SAVAGE, W. E., M.R.C.S., L.R.C.P., House Surgeon (attached to Orthopædic Department); WARBURTON, E. J., M.B., Ch.B. Manch., M.R.C.S., L.R.C.P., House Surgeon.

Vacancies.

For further information refer to the advertisement columns.

Barbados General Hospital.—Senior Res. S. £300.
Belgrave Hospital for Children, 1, Clapham-road, S.W.—H.S. and Asst. H.P. At rate of £100 each.
Bloomsbury Dispensary, 12, Bloomsbury-street, W.C.—Surg. 100 guineas.
Brighton, Royal Alexandra Hospital for Sick Children.—Hon. Consulting S., Hon. S., and Hon. Asst. S.
Cambridge, Addenbrooke's Hospital.—H.P. At rate of £130.
Cardiff City Mental Hospital, Whitchurch.—Sen. Asst. M.O. £550.
Croydon County Borough.—Asst. M.O. £600.
Croydon General Hospital.—Pathologist and Bacteriologist (Part-time.)
Derbyshire Royal Infirmary, Derby.—Two H.S.'s and Asst. H.S. and Cas. O. Each at rate of £150.
Edinburgh University, Physiology Dept.—Asst.
Gravesend Hospital, Kent.—Jun. H.S. £150.
Grosvenor Hospital for Women, Vincent-square, S.W.—Hon. Reg.
Hampstead General and North-West London Hospital, Haverstock-hill, N.W.—H.P. and Cas. M.O. Each at rate of £100.
Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—Asst. Res. M.O. At rate of £150. Also Pathologist, &c. £750. Also H.P. £50 for six months.
Leeds, St. James' Hospital, Beckett-street.—Chief M.O. £1000.
Liverpool City.—Medical Visitor under Lunacy Act, &c.
Manchester, Royal Infirmary, Roby-street.—Asst. M.O. At rate of £100.
Manchester, St. Mary's Hospital.—Two H.S.'s. Each at rate of £50.
Middlesex Hospital, W.—Phys. and Asst. Phys.
National Dental Hospital, Great Portland-street, W.—Hon. Anæsthetist.
North Middlesex Hospital, Edmonton, N.—Surgeon-Oculist. £1 1s. per hour.
Otago Hospital Board, Dunedin, N.Z.—Med. Supt. £1000.
Paddington Green Children's Hospital, W.—H.P. and H.S. Each £150.
Preston Royal Infirmary.—H.P. £190.
Queen's Hospital for Children, Hackney-road, E.—P. in charge of Skin Dept.
Reading, Royal Berkshire Hospital.—Third H.S. £150.
Royal Chest Hospital, City-road, E.C.—Res. M.O. At rate of £150. H.P. At rate of £100, and Anæsthetist. 10 guineas.
Royal Free Hospital, Gray's Inn-road, W.C.—Sen. Res. M.O. £150. Also Res. Asst. Pathologist. £150.
Royal National Orthopædic Hospital, 234, Great Portland-street, W. Surg. Reg. 100 guineas.
Salford City.—Bacteriologist. £600.
Salford Royal Hospital.—Radiologist. £300.
Stockton and Thornaby Hospital, Stockton-on-Tees.—Third Res. M.O. £150.
Swansea Hospital.—H.P. At rate of £150.
Victoria Hospital for Children, Tite-street, Chelsea, S.W.—Cas. O. and Reg. £150.
Walsall General Hospital.—Sen. H.P. and Jun. H.S. At rate of £200 and £125 respectively.
West End Hospital for Nervous Diseases, Welbeck-street, W.—Hon. Reg.
Willesden General Hospital, Harlesden-road, N.W.—Res. H.S. and Non. Res. Cas. O. Each at rate of £100.
Windsor, King Edward VII. Hospital.—Hon. Asst. Anæsthetist to Ear, Nose, and Throat Dept.
Worksop, Victoria Hospital.—H.S. At rate of £170.

The Chief Inspector of Factories announces vacant appointments for Certifying Factory Surgeons at Birmingham, West (Warwickshire), and Newquay (Cornwall).

Births, Marriages, and Deaths.

BIRTHS.

FABER.—On Sept. 24th, at Chichele-road, Cricklewood, N.W., the wife of Dr. Hamilton S. Faber, of a son.
RODD.—On Sept. 25th, at Avenue-road, N.W., the wife of Captain A. Rodd, R.A.M.C., of a daughter.
SMITH.—On Sept. 25th, at Peckham-road, S.E., the wife of Dr. Kenneth V. Smith, of a son.

MARRIAGES.

ELLIOTT—ROBINSON.—On Sept. 23rd, at the Parish Church, Knotty Ash, S. E. Y. Elliott, M.R.C.S., L.R.C.P., to Irene, only daughter of A. Robinson and of the late Mrs. Robinson, Broadgreen, Liverpool.
HORNE—MOCLAIR.—On Sept. 8th, at St. Andrew's, Westland-row, Dublin, Andrew J. Horne, M.A., M.D., to Delia Moclair, M.B., D.P.H.
MOOR—STORRS.—On Sept. 21st, at Rochester Cathedral, Frewen Moor, *M.C.*, M.A., M.D., of Westgate-on-Sea, to Lucy Petronella Noel, younger daughter of the Very Rev. John Storrs, D.D., Dean of Rochester, and the late Hon. Mrs. Storrs.

DEATHS.

IEVERS.—On Sept. 22nd, suddenly, at St. Leonards, Eyre Ievers, M.D., C.M., late of Tonbridge, aged 78.
NICOLL.—On Sept. 25th, suddenly, at Braemar, Aberdeenshire, P. J. S. Nicoll, M.D., J.P., of Romford-road, Stratford, London.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

THE POST-GRADUATE HOSTEL.

SOME RECENT ADDRESSES.

THE evening meetings at the Post-Graduate Hostel (now housed at the Imperial Hotel, Russell-square, W.C.) have provided already an opportunity for the reading of interesting addresses upon clinical and upon broadly professional subjects, which have given rise to informal debates. These interchanges of views and experiences will become more useful as the facilities offered by the hostel are more widely recognised and the audiences grow larger. The activities of the organisation have been announced from time to time in THE LANCET, the subjects of debate and the openers being stated, with dates and times. All members of the medical profession are invited to be present and to participate in the discussion.

Among recent addresses, given as openings to debates, have been one from Prof. J. E. Frazer on the clinical bearings of certain embryological defaults—this is referred to elsewhere (see p. 718); one from Dr. Clark Trotter, the medical officer of health for the Borough of Islington, who dealt with the relation of the general practitioner to the health officer; and one from the Editor of THE LANCET upon signed contributions by medical men to the lay press.

The General Practitioner and the Health Officer.

Dr. Trotter reviewed the relations of the general practitioner to the health officer from a view which enabled him to give anecdotal illustrations of the particular principles which should regulate the relations. Dr. Trotter said that he began the study of medicine when unqualified assistants were in existence and, while admitting that in the general interests of the public and the profession they had to disappear, he was of opinion that with their disappearance there went also a large amount of that interest in the problems of midwifery and in the treatment of women and children which was at one time a feature of general practice; while the panel system had replaced club practice it had also altered a whole side of private practice. The following description of an old-time practitioner will be recognised as sufficiently accurate. "This man started from his medical school equipped with the up-to-date teaching of his time and possessed with one of the earliest clinical thermometers about a foot and a half long, which took about half an hour to register the temperature. His business instinct was strong; he kept up the counterfoils of his notification book, to make sure his fees tallied. Visiting a poor house with him when asked to see a case, one noted he lagged behind when leaving to collect his eighteenpence. With such fees this general practitioner acquired wealth, erecting a statue in his town to Queen Victoria, for no other object than to show his nephews that he might spend as he liked and not necessarily leave his money to them."

Dr. Trotter went on to mention his experiences with a general practitioner "who specialised in specialists," and and with others who were too ready to suppress clinical instincts and to substitute for considered diagnosis indiscriminate swabbing; and added a short review of the responsibilities incurred by both general practitioner and medical officer under the increasing array of enactments and orders in respect of public health and especially of housing. He commended the activities of welfare centres and child welfare schemes, but found that such schemes were not always regarded with favour by doctors who here failed to meet a public demand upon them which was reasonable if they wished to maintain the position of family physician. In detailing the duties of the health officer in respect of home sanitation and the incidence of disease, he urged that the health officer should give close attention to applications for housing accommodation, and to all questions of overcrowding, for here he should come into contact with the general practitioner of his area in a manner which must be mutually advantageous. A health officer cannot provide housing accommodation, he said, adding that, in the opinion of a High Court Judge, any family could keep poultry in a bedroom if they liked, as there was no law to prevent such an action. A stimulating address closed with the warning note that public health work is becoming now so specialised that health officers who have had no opportunities of studying the conditions of general practice should take every chance of doing so in their own areas.

Medical Communications to the Lay Press.

The Editor of THE LANCET began by pointing out that the apparently logical general conclusion that the public dissemination of medical information is good must be received with considerable reservations. It was necessary, he said, to consider the way in which the information is published as well as its character; where the public need for the information was clear the public ought to be able to get it from responsible

medical authorities, but this did not necessarily mean that a particular medical man should write a signed article. He held that it ought not to be beyond the ambition of responsible newspapers to provide these sound medical articles in editorial unsigned form, as is done, for instance, in the matter of political communications. Newspapers should be proud to rely upon their own prestige as a guarantee to their readers that only information was being given which was needed, and which was obtained from properly informed sources. At the same time it was admitted that, as the public laid particular stress upon the signature, the attitude of editors in trying to obtain the signed information was reasonable. The kind of article was then indicated briefly which clearly could be signed, both with public advantage and without professional inconvenience, and it was shown how this differed from the kind of article which would fall under the unfavourable notice of the General Medical Council or of the ethical committee of the British Medical Association. The articles which led to censure, and in the case of the General Medical Council to penal interference, were especially those whose contents wore an advertising appearance, this usually taking the form of giving advice on disputed pathological questions with an assumed superiority of knowledge. The speaker allowed and deplored the difficulty of exactly appraising communications as professional or unprofessional, because the situation led to public criticism of the General Medical Council for subjecting some members of the medical profession to penalties while leaving others alone. He wished accordingly that the General Medical Council would publish more details of some cases which had come under their penal jurisdiction, thus enabling the public to appreciate the reasons for any action taken, and doing away with a good deal of mischievous misunderstanding.

In a debate which followed, Mr. McAdam Eccles drew attention to the various kinds of signature employed by writers of articles, and referred especially to the printing of accompanying photographs and noticeable headlines.

Dr. Alfred Cox said the whole subject was a source of much anxiety to the British Medical Association, which was constantly charged with inconsistency. He thought it desirable that the public should have sound information about medical matters, but that the prestige of the profession was being lowered by the flood of signed communications to the press. He agreed that the appearance of medical articles in journals of good repute should be a guarantee of the author's standing without any signature, and that further information from the General Medical Council would be helpful.

Dr. P. H. Manson-Bahr, Dr. Clark Trotter, and Dr. Andrew Balfour also thought that sound medical information should be disseminated to the public, and the last, citing an experience in the United States, pointed out that medical news might be examined by a medical authority before it was published.

"MYOPLASTIC SUSPENSION."

UNDER this title Dr. E. M. Neville describes a method which his anatomical studies have led him to advocate for the support of displaced abdominal organs. His method is based upon the surgical principle that musculo-tendinous flaps cut in appropriate manner from neighbouring musculature are the most effective means for ensuring strength and adequate function in any suspension mechanism. Its application is manifold.

(1) *To the Misplaced Uterus.*—Instead of using the weak round ligament in the modified extraperitoneal Gilliam method a musculo-tendinous flap, cut from the distal and mesial portion of each half of the rectus abdominis muscle, is used for suspending the uterus, the defect in the abdominal wall being easily repaired.

(2) *To Severe Gastroptosis and Dilatation of the Stomach.*—A musculo-tendinous pedicle flap is cut from a selected part of each external abdominal oblique muscle, brought through the anterior abdominal wall, external to the rectus muscle and embedded, after reflection of suitable flaps of the serous coat, in the anterior wall of the stomach. The serous flaps are then wrapped and sewn round the intraperitoneal portions of the musculo-tendinous pedicle flaps. The stomach is thereby suspended in hammock-like fashion, retaining its freedom of mobility. The anterior abdominal wall is easily repaired.

(3) *To the Movable Kidney.*—A musculo-tendinous flap of the posterior part of the external abdominal oblique muscle is brought through the internal abdominal oblique muscle and the transversalis muscle and attached to the kidney which thereby is underslung. The latissimus dorsi muscle is utilised for covering over any defect by means of a suitable tendinous flap cut from it and sewn to the edge of the oblique muscle. The method may be combined with a suspension from the twelfth rib.

Dr. Neville goes on to suggest that myoplastic pedicle flaps may be used for other surgical purposes, such as the repair of a weak abdominal wall, especially after herniotomy and for recurrent and secondary ventral hernias. A myoplastic pedicle flap may be cut from the tensor fasciæ femoris muscle, brought across the inguinal region deep to Poupart's ligament, and implanted on the region selected for strengthening or repair. In certain cases this muscle may be used for suspending the uterus extraperitoneally.

LOOKING AT PICTURES.

IT was a happy idea of Messrs. Duckworth and Company to issue "The Picture Galleries Series," [1] being brief notes on the contents of the large art galleries of the country, written in each case by an official of the gallery and including a certain number of illustrations which are particularly explanatory of the text. To medical men, so many of whom delight in pictures and not a few of whom have some measure of artistic accomplishment, these publications may specially appeal because of the explanations which are given of the place which particular painters hold in the estimation of judges. The notes supply information on the influences which prevailed at certain dates in the schools of the different countries, so that we learn to perceive what one master derived from another and who made the great departures which have influenced pictorial art permanently. All the volumes, like the two under notice, should make the time spent in the galleries both more interesting and more informatory. The assistant keeper of the Tate Gallery is very frank in his criticism of certain later nineteenth century Academicians, but all his views will not be endorsed. He does not seem to understand that the motives for making a picture may be complex in his desire to keep the illustrator in his place.

A REGISTER FOR RECORDING THE PURCHASE OF DANGEROUS DRUGS.

A CONVENIENT register arranged for recording the purchases of Dangerous Drugs, by practitioners who do not do their own dispensing, has recently been issued by H. T. Woodrow and Co., 3, Cook-street, Liverpool. We may remind our readers that the keeping of such a register is now compulsory. The register is divided into four sections for entries of purchases containing morphine, cocaine, diamorphine, and medicinal opium respectively. Columns are provided for the date on which the supply was received, the name and address of the person, or firm whence it came, the amount of the drug, and the form in which it was obtained. A column headed "remarks" is to be used for correction or alteration of any entry, no obliteration or erasure being allowed. A summary of those clauses of the regulations now in force that relate to medical practitioners is included in the register, also a list of preparations exempted from the regulations.

GROWTHS IN PLANTS AND MAN.

WE have received from Dr. John Brown, in the course of his conduct of a campaign against cancer, a request for views on free clinics in relation to the disease and on, among other things, the biological range of cancer. The arguments for and against free clinics in this connexion were briefly stated in our columns a fortnight ago (see THE LANCET, Sept. 18th, p. 611). With regard to the biological range of cancer, Dr. Brown suggests that a book is needed as "An Introduction to the Study of the Etiology and Prevention of Tumours in Plants, Trees, and Animals, with special reference to the Racial Incidence of Cancer in Man." There is a huge medical and a huge botanical literature to consult already, and until, by study of these and experimentation, some more definite analogies between the action, say, of lichens and galls and the pathological manifestations of malignant disease are established, it is difficult to know what the terms of reference of the book which he asks for would be. Dr. Brown considers that it should be "complemental to human cancer by experts in the new sciences of modern biology," words which certainly open up a large field if we understand them rightly. It may be admitted that the cancer problem is linked with the problem of neoplastic growths in general, and it is common knowledge that many people have been studying kindred conditions in the animal and in the vegetable kingdom in the attempt to arrive at some deductions which should be of general use. Revelations of practical application have not yet been made, probably because there are not yet sufficient indications for a path of research along which scientific medicine and scientific botany can proceed in company.

ERRATUM.—In a note last week upon a new tracheotomy tube the original model should have been attributed to the late Mr. R. W. Parker, and not to Mr. Rushton Parker.

[1] Hours in the Wallace Collection. By Philip Hendy. With 16 plates and a preface by S. J. Camp. Pp. 138. 2*s.* 6*d.* Hours in the Tate Gallery. By J. J. Manson. With 16 plates and an introduction by Charles Aitken. Pp. 144. 3*s.* 6*d.*

Addresses to Medical Students.*

SCIENCE OF CLINICAL MEDICINE.

Delivered at the Opening of the Winter Session of the Westminster Hospital on Oct. 1st, 1926,

BY SIR ARCHIBALD GARROD, K.C.M.G., D.M., F.R.C.P., F.R.S.,

REGIUS PROFESSOR OF MEDICINE IN THE UNIVERSITY OF OXFORD; CONSULTING PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL.

[Sir Archibald Garrod, having noted the complete revolution which the work of the bacteriologist and protozoologist has produced in the conception of the nature of disease during the last half century, pointed out that the demands of the medical student of the present day run along two separate paths: first, they must acquire a working knowledge of the science upon which medicine, using the word in its widest sense, rests; and secondly, they must study at bedside and in laboratories the signs and symptoms of disease, that they may acquire the technique of the therapeutic measures. He would omit, he said, from his address all reference to the personal characteristics needed for the work of a doctor, while emphasising at the outset the importance of the human aspects of our calling. He would make the scientific side of clinical medicine his theme. He continued:—]

THE SCIENTIFIC SPIRIT AND CLINICAL MEDICINE.

The student of 50 years ago almost always entered upon his studies with the intention of taking up some branch of practice or of entering one of the public services. Few alternatives were open to him. There were no bacteriologists, pathology was synonymous with morbid anatomy, and the men who, from the end of the eighteenth century onward, had laid the foundations of biochemistry in this country were all practising physicians. They, and others of scientific bent, pursued their researches in the period of waiting for practice and in its intervals, but nevertheless they were pioneers, not only of the medical, but of other sciences also.

Nowadays the position is very different. In addition to the physiologists, most of whom still go through the medical curriculum, not a few qualified men turn aside from the path of practice and devote their lives to teaching and research in the various branches of pathology or in pharmacology.

This has its advantages and its disadvantages. On the one hand, some men of scientific tastes and interests—for whom the work of the laboratory has great attractions, whereas the practice of medicine has none—enter the profession, and by their researches contribute greatly to the advance of our science and art. In that way medicine is the gainer. But, on the other hand, there is real danger that the great majority of men of scientific bent will turn aside and desert clinical work, in order to devote themselves to work in the laboratory. This tendency is increased by the attitude of some of the laboratory workers, who regard clinical medicine as a subject hardly worthy to attract men of scientific ability. So there has been a drift apart of the ward and the laboratory, which is far more pronounced in this country than elsewhere, since it is only recently that complete clinical units, with wards and laboratories under a single head, with trained assistants, have been established amongst us.

It will be my endeavour to convince you that here is abundance of work to be done on clinical subjects by strictly scientific methods; and seeing that much of the information to be sought can only be got by clinical research, it would be nothing short of a disaster if all, or nearly all, those qualified by tastes, training, and opportunities to pursue clinical investigations on such lines should desert the wards for the laboratories.

The study of pure pathology and of the problems of immunity entails experimental investigations by men highly trained in the subjects and the methods employed, in bacteriological technique, and chemical manipulation. Those who devote their lives to such work are most valuable members of the profession; but, on the other hand, the mere fact that a piece of work is done in a laboratory does not make it a scientific research. The routine of clinical pathology is not more scientific than the examination of a chest, the diagnosis of a lesion of the brain, nor even than the careful taking of notes at the bedside.

It is not to be expected that everyone who enters upon the practice of medicine will approach his work in a strictly scientific spirit and with zeal to contribute to the advancement of knowledge, although he must employ scientific methods. It must needs be that the bulk of the members of our calling will, owing to the incessant demands upon them, have little time or opportunity for investigation on broad lines. They must be content, willy-nilly, to carry out the day's work with practical skill and common sense, making good use of what they have learnt from their teachers and from their own experience. Yet not a few of those so circumstanced make important contributions to medical knowledge.

On the other hand, it must not be forgotten that the knowledge upon which the art of medicine is based has been gained by work done on scientific lines, by methods of observation and experiment. All the great therapeutic advances of recent times have been the outcome of scientific investigation; and in medicine, as in other sciences, investigations carried out with no practical aim have proved very fruitful in practical results. It is to scientific research that we owe aseptic surgery and all that it has rendered possible, the conquest of insect-borne diseases, the banishment of the typhoid terror from campaigns, the discovery of the vitamins, and the utilisation of hormones. No better example can be quoted than the history of insulin, from the experiments upon dogs of von Mehring and Minkowski to its widespread benefits in the present day.

[Having referred to the crowded state of the curriculum and deprecated any suggestion that it should be lightened by less attention to anatomy and physiology, Sir Archibald Garrod pointed out that the aims of the practitioner, though they are immediately the making of a diagnosis and the discovery of the appropriate therapeutic measures, must go beyond these; there is the study of disease as it manifests itself in the living human subject—the gaining of new knowledge for the advancement of medicine. Of the science of diagnosis he spoke as follows:—]

THE MEDICAL CURRICULUM AND THE SCIENCE OF DIAGNOSIS.

The science of diagnosis is, in the main, a science of observation, the aim of which is to detect in the living patient processes and lesions which are beyond our reach, but which would, in most instances, be revealed at a post-mortem examination. Yet it rests largely upon post-mortem teachings, and all who aim at becoming capable diagnosticians should take advantage of every opportunity afforded to them of seeing, and whenever possible conducting, such examinations. Such opportunities are most common during student days, and only too many of us regret in after life that we have neglected them; for morbid anatomy, one of the most important subjects in the medical curriculum, can only be learnt by personal observation. Do not forget that there is an immense difference between facts which we *know* and facts with which we are merely acquainted. Facts which we know are not those about which we have read, or have heard lectures, but those which we have observed, apprehended, and confirmed for

*With the consent of the authors all these introductory addresses are reproduced in somewhat abridged form.

ourselves. We need no *memoria technica* to recall a fact which we *know*.

Some diagnostic methods are simple and involve merely the use of senses—of our eyes, ears, nose, and fingers; others require the use of instruments of more or less complexity; and others, again, involve chemical or bacteriological examination of the blood or excreta, by methods usually carried out in the laboratory. It is hard to realise how recent most of our diagnostic methods are. Auscultation and percussion were only brought into use at the end of the eighteenth century; the clinical thermometer came into general use in our hospitals as recently as the 'seventies of last century. Blood counts began in the same decade, and the importance of leucocyte counts was only recognised in the 'nineties. Since then our diagnostic resources have been largely increased. The discovery of the tubercle bacillus, and its ready detection in the sputum of many sufferers from pulmonary tuberculosis, opened the way for wide applications of clinical bacteriology—the detection of various bacteria on the one hand, and the agglutination tests on the other. More elaborate means, such as the Rontgen rays and the electrocardiograph, have rendered our findings far more precise, and we now have methods of testing the functional efficiency of such organs as the liver, kidney, and pancreas.

As long ago as the middle of the last century uric acid was detected, and estimated, in the blood of the gouty, but in recent years methods have been devised which render possible the estimation, not only of uric acid, but also of glucose and urea, in small specimens of blood from a prick in the ear.

All these refinements and advances have not superseded the older and simpler methods. It is as necessary as it ever was that the medical man shall be trained to make use of all his senses, supplemented by the stethoscope and thermometer. A laboratory is not always within reach, and it is often necessary to act before a bacteriological report can be had. Moreover, the older methods have been improved, and pulmonary tuberculosis is now usually diagnosed by auscultation and percussion at a stage at which it would have escaped recognition 50 years ago.

Auscultation and percussion are strictly scientific methods. Consider for a moment how by such means it is possible in very many instances to ascertain beyond all doubt that a patient's lung is consolidated, or that his pleural cavity contains fluid; that his heart is hypertrophied or dilated, or that there is narrowing of a valvular orifice or leakage of a valve. Such diagnoses involve accurate observation and sound interpretation of the signs observed, and the confidence with which we make them is due to confirmation of such diagnoses at many post-mortem examinations.

Lesions of the nervous system often present difficult problems of localisation, for the brain and spinal cord are wholly out of reach of direct examination. Yet by making use of the findings of experimental physiology, and the teachings of morbid anatomy, it is usually possible to make a correct diagnosis of the seat and nature of a cerebral or spinal lesion; just as a man who is thoroughly conversant with the telephone system may, by comparison of observations made in several branch offices, diagnose accurately the place, and form a shrewd notion of the cause, of an interruption in a central office which he cannot visit.

A diagnosis often involves replies to two questions—namely, Where is the lesion? and What is its nature? —but the answers often hang together. For example, the signs and symptoms, in a particular case, point to a lesion of the head of the pancreas, and experience teaches that such a lesion is almost certainly a carcinoma. Yet a diagnosis may be right in one respect and wrong in the other.

There are some people who possess a natural diagnostic insight, and others who acquire such an insight by long experience. The accumulated impressions, derived from cases seen at various times, may point to a right solution. Just as a child spells out the letters of words, and a beginner translates laboriously what he reads in a foreign tongue, so the medical student runs over in his mind the possible causes of an observed sign or symptom. But experience allows such conscious effort to be dispensed with, the foreign words come to convey their meaning directly, the clinical picture points to a correct diagnosis.

One of the dangers which beset the medical student of to-day is that he may be tempted to neglect that thorough grounding in auscultation and percussion and the simpler chemical and microscopic tests which can be made at the bedside, and may come to rely upon reports from the laboratory of examinations which he has not himself carried out. To this danger all examiners in medicine and surgery are keenly alive.

MEDICAL TREATMENT AND NATURAL FORCES.

[Coming to treatment, Sir Archibald Garrod alluded first to the advances in surgery rendered possible by Lister's researches, and indicated that the physician, while unable to obtain definite results comparable to those which follow, for example, the removal of an inflamed appendix, has to help the patient to hold his own whilst Nature works a cure. One of the most important lessons learnt during the last half century was that Nature has provided the patient with power to produce far more potent drugs than any used by our forefathers, but that their utilisation demanded the keenest pursuit of clinical research. The extensive use of serums and vaccines represent, he said, the attempts to utilise Nature's own remedies, and he trusted that in due course it would be possible to give them as pure products and free from undesirable admixtures. The study of dietetics and the discovery of the vitamins, the employment of Rontgen rays, radium, and its emanations, light and ultra-violet rays, electrical treatment, massage and manipulative measures, as well as the nursing methods of the present day he alluded to as the great modern additions to the weapons against disease.]

PURSUIT OF CLINICAL RESEARCH.

So far I have spoken of scientific knowledge and method, as applied to the recognition, control, and treatment of disease, but what I particularly wish to emphasise is the fact that the clinical observer has abundant opportunities for the study of disease as seen in the human subject—in other words, for the pursuit of clinical research. Much of the knowledge so obtained is not to be had from experiments on animals; for a human patient can describe his sensations with greater or less accuracy, and can tell us of the medical history of himself and his family. Such work as that on the sensory nerves which we associate with the name of that great observer, Henry Head, could not be done in any other way.

Although it is established that, in the majority of instances, illness results from the invasion of the body by micro-organisms, vegetable or animal, or by poisons of inorganic origin, and although such immense help has been got from the culture and study of such organisms and of their effects upon lower animals, and by the experimental study of the phenomena of immunity, we cannot learn in the laboratory all that we need to know about disease.

What we call disease is the response of the organism to the invasion of the agents of disease, and, seeing that no two individuals are exactly alike either in structure or in chemistry, sickness does not conform to any single model; each individual case calls for careful observation. Owing, as I believe, to their chemical individuality, different human beings differ widely in their liability to individual maladies, and to some extent in the signs and symptoms which they exhibit. Hence it will be found a useful maxim that there is no such word as "never" in medicine. Rules which appear to be immutable turn out to have their exceptions.

Many idiosyncrasies are obvious and notorious, such as the sensitivity of individuals to special drugs, or particular articles of diet, which have no ill-effects upon others. As examples may be quoted the manifestations of sensitivity to proteins, seen in the various forms of urticaria, in hay fever, and in varieties of asthma. Light also is an agent which affects various individuals in very different ways. Usually beneficent, it produces unpleasant effects upon the skin of some individuals, and to a very few who are victims of congenital porphyrinuria it is a veritable poison.

Again, the minor injuries which are necessary accidents of the wear and tear of life vary greatly in their effects. In the bleeder a trifling knock may produce grave trouble in a joint; in victims of that strange anomaly fragilitas ossium it may cause a fracture; in a gouty subject it may induce an attack. So do our idiosyncrasies and our circumstances contribute to the moulding of our maladies. All this is the true basis of the doctrine of diatheses now unduly neglected.

THE GREAT PIONEERS.

[Here the lecturer, recalling that by clinical observation, controlled by morbid anatomy, almost all the maladies with which we are familiar had been differentiated, enumerated the work of certain pioneers in clinical research whose studies had led to particularly progressive results. Among the famous men whom he particularly brought to the attention of his hearers was Thomas Addison, who was able to diagnose by the close observation of a certain group of associated symptoms, disease of the adrenals, a condition where the diagnoses could be verified in the majority of cases by autopsies. His next example was William Jenner, who differentiated typhoid and typhus fevers from close observation of a series of fatal cases of continued fever which had come under his own observation, in all of which autopsies had been made. He spoke, in connexion with neurology, of Hughlings Jackson, whose "contributions to science, from the discovery of the association of convulsive attacks with lesions of the cerebral cortex to the wide and important generalisations upon which his fame largely rests, were the outcome of bedside observation controlled by morbid anatomy." Other names in the list were those of Parry, Graves and Basedow in connexion with exophthalmic goitre, Brown-Séquard, Marie, Fröhlich, James Paget, Jonathan Hutchinson, W. B. Cheadle, and Harvey Cushing; and he concluded by pointing out to the students that, despite the wonderful work done by these pioneers or because of the new vistas opened out by them, there are still large blank spaces in our knowledge to be filled.]

SCOPE FOR SCIENTIFIC WORK IN CLINICAL MEDICINE.

If, as I have tried to convince you, there is abundant scope for scientific work in clinical medicine, why is it necessary to point this out, and why do we so often hear the contrary opinion maintained, especially by laboratory workers? Is it not because medical men too often do not realise the requirements of scientific method? If we are to hold our own as members of the army of research, we need to see that our work is up to the required standard; that our observations are sufficiently precise, and are confirmed by the method of control; that our statistics will bear examination by statisticians, people whom it is not easy to satisfy, and that our hypotheses are legitimate inductions from facts which are clearly established.

There are, however, obvious difficulties which make it hard and often impossible for the clinician to be as exact in his methods as he would wish. Medicine is always in a hurry. The patient and his friends are only too apt to mistake scientific caution for incompetence; to demand a cut-and-dried diagnosis in an impossibly short time; and to estimate a ready dogmatism above a reasoned uncertainty. Time is often pressing, and the doctor is obliged to act upon very incomplete evidence, lest, whilst he waits for certainty, valuable hours may be lost. He cannot always put his treatment to the test by trying one measure at a time; and, again, he is bound to forego any diagnostic test, or even a thorough examination, if it appears to him that it might in any way be harmful to the patient. These are only a few of the hindering factors which are familiar to all practitioners.

You will have to realise that to a large section of the public all science is under suspicion, and scientific medicine is distrusted. A profession which makes a free gift to mankind of all its discoveries is widely regarded as a close corporation of people who look askance at men cleverer than themselves, merely because they have not a medical education, or because they base their treatment upon heterodox theories. This phase of thought is by no means helpful to him who would advance the knowledge of disease, and, through knowledge, its treatment.

In conclusion, let me repeat that for the clinician, as for the laboratory worker, and especially for both working in coöperation, there is abundant scope for original investigation—that highest product of the scientific spirit. We are not all built to do such work, and there are excellent investigators for whom an obvious practical aim is a necessary stimulus to research; but for those who are content to seek knowledge for its own sake there are great rewards; for the discovery of a new fact, however small a one, or the framing of a conception which throws a beam of light into some dark corner, brings a satisfaction which is without alloy.

Yet the way of the investigator is rough, and there are many disappointments to be faced. In the words of Ecclesiasticus:—

> "For at the first Wisdom will walk with him by crooked ways and bring fear and dread upon him, and torment him with her discipline, until she may trust his soul and try him by her laws. Then will she return the straight way unto him, and comfort him, and show him her secrets."

May she show her secrets to those of you who elect to tread her path.

PROFESSIONAL CAREERS.

An Address delivered at the Opening of the Winter Session at King's College Hospital on Oct. 1st, 1926,

BY SIR HUMPHRY ROLLESTON, BART., K.C.B., M.D., F.R.C.P.,

REGIUS PROFESSOR OF PHYSIC IN THE UNIVERSITY OF CAMBRIDGE, AND CONSULTING PHYSICIAN TO ST. GEORGE'S HOSPITAL.

[Sir Humphry Rolleston commenced his address with a warning against too early specialisation, inasmuch as the medical profession presented for its acolytes a wide choice of activities, comparing in this respect favourably with other professions. He continued:—]

In the first place, with the expansion and rapid development of medicine, there are more opportunities and varied openings than ever before. Secondly, apart from accidents, illness, and grave misconduct, a competence or living wage is within the reach of practically all qualified medical men who choose to work. The panel system has, in spite of the initial forebodings and opposition, really improved conditions for the rank and file of the profession. As a profession medicine does not bring wealth or a great position to more than a few, while it has an immense amount of gratuitous work to its credit, and is exposed to the frequent danger of infection from attendance on the sick and the occasional risk of vexatious legal actions for supposed malpraxis and improper certification of the insane. To enter on the physic line as a means of livelihood is justified by the results, but as a path to great material prosperity the way is long, treacherous, and may land the traveller in a slough of disappointment. In spite of Sir Robert Peel's dictum that "Nothing is so misleading as facts except figures," it may be a comfort to remember that statistics got out at various dates by Sir James

Paget, Sir Squire Sprigge, and Mr. E. M. Corner show that on an average over 75 per cent. of medical students obtain a qualification, and that according to the first two authorities 66 per cent. of those qualified have reason to be satisfied with their professional success.

[Contrasting the financial rewards of the medical and legal professions, he pointed out that, though the number of briefless barristers was large, the prizes at the Bar were greater and more numerous than in medicine, the position agreeing, therefore, with Adam Smith's dictum that in a perfectly fair lottery those who draw prizes should gain what is lost by those who draw blanks; as the vast majority of medical men succeed in earning a living the winners of great prizes should be exceptional, and so it is. Of the work of the great majority of the medical profession he spoke as follows:—]

General Practice.

General practice is still, in spite of increasing specialism, the future field of activity for the largest number—probably three-quarters—of qualified medical men, and there is plenty of scope and opportunity. Any medical man or woman can be on the panel for the 15,000,000 insured persons in England and Wales, and the financial and other conditions on the panel are superior to those of its predecessors the clubs and friendly societies. In England there are at present 12,696 men on the panel, or nearly half (46 per cent.) the estimated 27,600 men practising in England, but there are only 434 women on the panel, or one-fifth (19 per cent.) of the 2209 women in practice. For these figures I am indebted to Dr. Smith Whitaker, of the Ministry of Health. This rather striking difference in the sex personnel of panel practice may be in part due to women preferring to confine their work to their own sex and to children. But this is not the whole story, for unfortunately at present the public as a whole have not become accustomed to women doctors and as a rule the panels of women doctors are not crowded. Time no doubt will cure this, as other inequalities, but in the meanwhile women doctors are not finding it so easy to earn a livelihood in general practice as their brothers. The profession received a large influx of women during and of both men and women after the war, and the peak of the wave in qualifications has only recently been reached, so that there is some reason to fear a temporary overcrowding in the profession. A number of official posts in public health, infant welfare, and so forth in this country, in India, in the Zenana Mission, and elsewhere in the mission field are available, in which women doctors can find congenial occupation and a living. It is sometimes thought that the public medical services encroach on the general practitioners' preserves, and in time will lead to their exclusion. But Sir George Newman, who is in the best possible position to know, points out that in reality the reverse is true—

> "For the Poor-law Medical Service has 4000 medical officers for outdoor medical relief, practically all of whom are private practitioners; the post office list of 3500 medical men are all practitioners; out of 1450 medical officers of health, 1100 are private practitioners, and only 350 are whole-time officers; of the 1800 medical men engaged by local education authorities in the inspection and treatment of school-children, 1000 are in private practice; of 1770 certifying factory surgeons, all, hardly with exception, are private practitioners; and the whole of the national insurance service is in the hands of private practitioners."

Some other lines of work allied to general practice may be briefly mentioned. Examining for life insurance is usually a small item in a general practitioner's life, but some men by holding appointments under several offices spend most or even all of their time in this work. It is, of course, true that the chief medical officerships of large insurance companies are usually held by consultants and hospital physicians.

With the progress of medicine to a preventive standpoint the logical importance of establishing periodic overhauls of the adult population may be expected to be more widely recognised and acted on, as in this way the causes of early disorders may be removed and so the sequence of serious results prevented. If and when periodic overhauls, twice or three times a year, become recognised in much the same light as a visit to the dentist is now, a fresh line of work allied to insurance practice will be opened up. Police surgeoncies and appointments to big business firms, to look after their staff, again are nearly always part-time occupations, but in the future it is probable that industrial medicine will bulk more largely than it does at present and provide more berths for medical men who will devote their whole time to this branch of work, which provides much opportunity for interesting investigation. A good example of this is the recent recognition of squamous-celled carcinoma, usually of the scrotum, amongst the "mule-spinners" or cotton operatives, who during their work lubricate with a mineral oil the spindles of the spinning mules. The Home Office's Departmental Committee Report (1926) records 539 cases, 450 of the scrotum.

[Sir Humphry Rolleston next categorised the factors which determined the choice of general practice. Some men, he said, were individualistic and desired to be under no bureaucratic or regimental control; some were influenced by heredity—here he instanced "Georges Clemenceau," the medical ex-Premier of France, and the seventh medical member in lineal descent of a family which followed the profession for 300 years without a break; while the desire to earn sufficient income for marriage was another factor to be taken into account. He continued:—]

Development of General Practice.

With the changes time has brought about, men in general practice who become the guide, philosopher, and ultimately familiar friend of their patients whom they bring into and see out of the world, have also changed, for their medical education and general equipment have greatly improved. They have thus become less dependent on the help of specialists and consultants with whom to some extent they therefore compete. It has been thought by some that eventually general practitioners will become squeezed out by specialists and consultants on the one hand and on the other hand by preventive and social medicine, such as school, tuberculosis, and venereal clinics, and maternity and child welfare centres. But the general practitioner is the essential element in the medical service, and his elimination would be a most serious loss. Just as they have altered in the past so should they accommodate themselves to changing conditions to a larger measure of team-work, to a greater share in preventive medicine, and to take their part in public health organisation. A general practitioner has to possess a knowledge of every branch of medicine, in fact to be in miniature an all-round specialist with the proviso that he also knows his limitations—what he can safely do and what he should leave to others; for in these days, with the great and ever-increasing complexity of medicine, a real all-round specialist is, of course, impossible. This difficulty has to some extent been met by team-work; firms of general practitioners so constitute themselves as to cover the ground of the various branches of medicine, surgery, and gynæcology more or less completely, each partner devoting himself to some particular line of work. Thus in choosing a new partner consideration is given to applicants with such qualifications as a special surgical or even radiological bent, and the existing partners may from time to time take post-graduate courses so as to become recognised locally as experts in the diseases of the throat, eye, urology, and so forth. It is thus possible for a general practitioner to develop into an expert specialist and eventually to set up in a big centre; indeed, his all-round knowledge of the whole art of medicine is a very valuable asset to him as a specialist.

[After pointed allusions to the competition in the sphere of everyday medicine of "amateur doctors" and to numerous cults or "stunts," he warned his

hearers against the too easy dismissal of everything that does not appear orthodox, inasmuch as what in one generation is regarded as the obsession of a crank may subsequently become recognised as a valuable form of treatment. In this connexion he recalled to his hearers the essential part often played in extra-professional success by the imagination of the patient and the force of suggestion, quoting Oliver Wendell Holmes as follows: "So long as the body is affected through the mind no audacious device, even of the most manifest dishonest character, can fail of producing occasional good to those who yield it an implicit or even partial faith."

Sir Humphry Rolleston went on to analyse the prospects and promises of the careers, other than in general practice, open to medical men:—]

SPECIAL CAREERS.

Careers in the Services.

In the past men sometimes entered our profession because, being debarred by bodily defect or failure in negotiating examinations from the executive branches of the army or navy, their ambitions were to some extent met by being medical officers in the services. The call of adventure and itch to travel attract some entrants into the fighting and colonial services; a life of varied interests, an assured rate of pay, and the prospect of a pension to provide for retirement also weighed in the choice of the services, but the shortage in the services at the present time, possibly an aftermath and revulsion from the war, shows that these factors are somewhat in abeyance, and accordingly short commissions of four years or so with a gratuity on leaving, which helps in starting a practice, have been established. The opportunities for research and investigation have much increased in the naval and military medical services, and that devotion to scientific work is compatible with gaining the highest offices in the medical department of the army was shown by the appointment of the late Lieutenant-General Sir William Leishman as Medical Director-General. The new problems in connexion with aviation attract keen men of the kind wanted in the Royal Air Force. Tropical research with its great potentialities is specially open to those in the Colonial Service.

The increasingly active *health services* provide a large number of official positions, not only part-time which, as already mentioned, are chiefly occupied by general practitioners, but whole-time appointments, and these posts are likely to increase in number and importance. Appointments in fever and mental hospitals and sanatoriums are, of course, whole-time, and provide opportunities for research and openings for men who are attracted to these special branches of medicine.

Careers as Specialists.

Wise specialism is of the greatest advantage for the progress of medicine, but its followers should know something about everything medical as well as everything about their own branch. Without taking a reactionary view, there is a danger that specialism may be exaggerated and that parts of medicine which should be within the reach of every competent medical man may be prematurely elevated into a specialty; in ancient Egypt there was a phase (500 B.C.) when each disease had its practitioner who confined his activities to that one condition. To be a clinical specialist has mercenary advantages, for practice comes earlier and the lucrative rewards may be considerable.

The *pathologist*, *bacteriologist*, *serologist*, and *biochemist* belong to a special branch of medical practice which has a progressively increasing scope of activity, as is shown by the overwhelming flood of new work on these fundamental sciences; from a material aspect the recommendations of the Royal Commission on Health Insurance, if carried into effect, will increase the number of official posts available for those whose abilities and temperament render them better suited for laboratory investigations than for clinical practice, and who, therefore, prefer the quiet pursuit of truth in the laboratory to that of wealth in a limousine or a Ford. Intellectually, laboratory research with the possibility of making a permanent addition to knowledge which will advance scientific medicine and so benefit suffering humanity, has an appeal of the highest order, and all honour to those who are able and willing—for we are not all so gifted—to follow the call. It can hardly be too often emphasised that in the best interests of all concerned the clinician and the laboratory worker should be in constant and close touch, and, indeed, in the whole-time directors of professorial units they are combined. The laboratory worker should for his own sake have a full and experienced training in clinical medicine.

[After brief allusion to the work of the anæsthetist as a branch of therapeutics not so sharply marked off as a specialism, and to the new and particularly special work done in radiology, he continued:—]

Careers in Consulting Practice.

Consulting physicians and surgeons, though often dubbed "specialists" by the public, are not usually regarded by their professional brethren in the same category as those who practise ophthalmology, gynæcology, laryngology, otology, psychiatry, orthopædics, and other legitimate specialties. The general consulting physician and surgeon have had their wings somewhat clipped by the growth of specialism, and, indeed, hospital physicians now commonly pay more particular attention to some branch of their subject, such as diseases of the heart, lungs, nervous system, or alimentary canal. It is more especially the general consulting physician who has suffered, and the wait for monetary success may be so long that without private means the struggle is disheartening. Few consulting physicians were more successful than Sir Andrew Clark (1826–93), who said that he had to work ten years for bread, ten years for bread-and-butter, and 20 years for cakes and ale; it is not given to all to practise for 40 years, or if they do to reach the material rewards of the last stage. Money may be a mark of success, but there are other conceptions of success, and it has been written "What shall it profit a man if he gain the whole world and lose his own soul?"

With surgeons the outlook is very different, for their technical skill in operating has been enabled by the discoveries of anæsthesia and antiseptic and aseptic methods to become most successful in combating disease in all parts of the body, especially cancer and acute inflammation in the abdominal organs. But in large centres surgeons are largely concentrating their activities on some group of disease, such as the abdomen, malignant disease of the breast, surgery of the brain. Of the two great, if artificial, divisions of the healing art, pure medicine and surgery, the second is naturally the more attractive, for the benefits wrought by operation are much more obvious and spectacular than those in a physician's practice. The operating surgeon has invaded, and with good justification, realms of disease formerly regarded as sacrosanct to the physician, and the rewards are much greater; thus gynæcology in its advance has become surgical, and much of the treatment of digestive disorders is on operative lines. A budding gynæcologist should now be a Fellow of the Royal College of Surgeons. Time was when the physician was paramount, but now there are not wanting definitions of a surgeon which point to his supremacy, such as "A surgeon is a physician who can use his hands," "A surgeon is a physician and something more," and perhaps the arresting, if somewhat intriguing, autodefinition of the distinguished President of the Royal College of Surgeons, "A physician doomed to the practice of surgery." The financial rewards are much greater and begin earlier than in the physicians' earthly course, but on the other hand a surgeon's flood of activity ebbs sooner, and the wear and tear of a surgeon's exacting life are much greater than in the case of his medical brother; writing last year about this subject as illustrated by the staff of the Manchester Royal Infirmary in 1900, Mr. A. H.

Burgess pointed out that the death-rate on the surgical side was nearly five times higher than among the physicians. The future of the general surgeon is a matter for careful consideration by those who are thinking of reaping a harvest 20 years hence. The various specialties, laryngology and otology and proctology, which tend to spread from the orifices further into the alimentary canal, orthopædics, genito-urinary and venereal diseases have narrowed the former vista of the general surgeon. Further, if, as is within the bounds of imagination, discoveries such as that of Gye and Barnard lead to prevention and cure of cancer, and the immunology of the future to the prevention of inflammation of the vermiform appendix, gall-bladder, and other forms of inflammatory abdominal disease, the activities of the operating surgeon would be greatly curtailed and little more than accidents and deformities would remain.

[Sir Humphry Rolleston then pointed out that the differentiation between physicians and surgeons was artificial in principle, and closed as follows, repeating the warning against the precipitancy in the choice of any particular side of the medical career :—]

It is better to utilise a year or so at the beginning of the waiting period, when the mind is elastic and fertile in ideas, to do some work of permanent value. So often a man seizes the opportunity of gaining an assistant physiciancy or assistant surgeoncy at a hospital without a medical school and becomes a slave to seeing out-patients in an unprofitable race against the clock, when by spending the same time in experimental research he would establish a claim to a better appointment, even though he may appear to be somewhat later in the start of the race with his peers.

THE FUTURE OF WOMEN IN MEDICINE.

An Address delivered at the Opening of the Winter Session at the London (R.F.H.) School of Medicine for Women on Oct. 1st, 1926,

BY SIR WALTER FLETCHER, K.B.E., F.R.S., M.D., F.R.C.P.,

SECRETARY OF THE MEDICAL RESEARCH COUNCIL.

Dr. J. G. Adami, Vice-Chancellor of Liverpool University, whose death so lately has brought very heavy loss to a host of friends and to many good causes, was to have delivered the opening address. He would have brought some encouraging greeting and good counsel, ripened by a long life of active work in research, in teaching, and in administration, at Cambridge, at Montreal, and at Liverpool. I owe him a heavy personal debt for his constant and warm-hearted friendship. He showed this to me, then a stranger to him, when I was a freshman only a few days old at Cambridge, at a time when he was a Fellow of Jesus College, elected there after his work with Roy on the mammalian heart. Later at Montreal, as professor of pathology, later again during the war, when I worked in very close touch with him in some directions, and finally at Liverpool during his many-sided work there for the University and for education, he never failed to show me, as he showed to all, an instant sympathy and an eager impulse to help and to give rather than to take. His high technical achievements are well known and have been lately well described. His success at Liverpool in his work for the University will become increasingly recognised and measurable as the long harvest follows his sowing. But I think that if we had any right means of calculation we should probably come to know that his greatest service of all lies really in the unseen chain of events flowing from his innumerable and unrecorded acts of unselfishness and of kindness.

Our chief object, I take it, is to greet and cheer members now beginning work here and to welcome them into the common fellowship of work and study in this place. To do that is both easy and agreeable, and may I congratulate your freshmen upon entering their apprenticeship to a profession which has so much to claim and so much to offer for any who join it with the right qualities of mind and heart ?

But it is expected that our greeting should be coupled with some kind of friendly admonition or advice, and it is here I feel that the difficulty begins. I am not troubled by the general dubiety of giving advice. You will remember Lord Morley held that there were two kinds of fool in the world—those who give advice and those who take it. We can evade that condemnation by giving not direct advice but helpful information. Yet what accurate information about the coming years can we now give to inquiring beginners ? What the freshmen now seeks, surely, is information about the probable professional opportunities open to her in the early and distant future, so that she may take the best way to making the most of her powers. The difficulty of helping her is the difficulty of forecasting the future, and I think that the problems here are more pressing and more puzzling at the present time than ever in the past.

GENERAL AND SPECIAL PROBLEMS.

We are faced by two sets of problems : those which belong to all medical education, as well as those special problems which belong to women as such. The very rapid development of science in the past generation and its growing application to medical practice are making it year by year more difficult to predict the course which medical practice is likely to follow in its next progress and to direct the lines of medical education more fitly to their ends. Great changes are taking place, and the rate of change is likely to become more rapid rather than more slow. The progress of surgery, of which the development in the last generation has been so phenomenal, seems likely now to follow the law of diminishing returns and to be approaching something like stability. If science, indeed, could give us preventive control over cancer the volume of surgery would at once be immensely reduced. It is not very bold, again, to think that the physician is likely to find his powers and scope changing rapidly in many ways as we lay hold of the elements of a scientific knowledge of nutrition and begin to use its enormous latent powers. The work of preventive medicine in all its branches is in a period of great expansion, and many new forces are now at work which will open up the possibilities of extending this throughout the Empire and of removing the long-standing waste and disgrace of preventable but unprevented disease under the British flag. The growth of biochemistry holds obviously untold possibilities, some almost within our grasp, which, when applied to human affairs, may deeply affect the future of medicine and indeed may bring startling changes to the whole of our social structure. In large and in detail the problems of the kind thus briefly indicated must be in the minds of all those who are serious about medical education.

THE MEDICAL EDUCATION OF WOMEN.

All these general considerations, of course, are relevant to women's education no less than to that of men. But I would venture to urge now that there are problems of women's education in medicine which are not the same problems as those for men, and that women should resist the present assumption that their medical education should follow exactly the lines laid down for men, and that their outlook towards their future practical work should be the same. Hitherto the medical education of women has followed in almost every detail the traditions and practice evolved for men. This has been an historical necessity. The early pioneers of women's medical education had no choice. I need not in this place touch on the history of this great movement, so well known to all here. It was a movement of which some of the great leaders have their names enshrined for ever in this school. *Si monumentum requiris circumspice.*

The battle now, however, has been fought and won, and almost complete freedom has been gained for

the future development of women's medical education. The time seems to have come when close parallelism at every stage of the medical education of men and women should no longer be assumed. Better reasons, at least, must be found for it than custom and convenience, which sprang from older necessity. It may be that to maintain too close a parallelism is wasteful and even disastrous. As biologists we cannot fail to be awake to this. "Male and female created He them." We should be slow to think that the very best powers of a woman can be developed and employed by following exactly the same course and by working in just the same fields as those in which the best powers of a man may be brought out. We must believe that the highest service of each will be given in differentiation of function, and that coöperation between man and woman, each working in the best sphere, is to be far preferred over rivalry. Closer adaptation of the nature of the work to the qualities of the workers by no means involves any inequality or any lowering of intellectual standards. On the contrary, it is likely to call for higher standards on each side and to give room for effort which will be more effective because it will be more intensive.

I touch upon these problems here with the greatest diffidence. I am much more certain of their existence and importance than I am of the right way to their solution. When I speak of divergence or differentiation in the educational courses to be followed by men and by women, I am thinking, of course, of the whole period of training, and more especially of post-graduate training. How far, or at what points, or if at all, there should be a difference in the minimum courses for qualification are other problems not now considered. I am thinking rather of what a woman student should be inclined or recommended to select than of what she should be made to do by regulation.

In this matter we should think first of the fields of work specially appropriate to either sex, and without looking at all closely now to see where the exact boundaries of the fields may lie. It seems to me obvious that the rough and tumble, if I may use those words, of general practice make it much less suitable as a general rule for women than for men. It seems evident, too, that only exceptional women are likely to join with men on equal terms in specialised surgery. It will be long, to give another instance, before medical work in the tropical and many other parts of the Empire will be so suitable for women as for men.

THE SCOPE OF WOMEN IN MEDICINE.

On the other hand, there are large fields of service calling peculiarly for the special gifts of women, in which it seems to me that they could give far more abundant and more progressive service than is given now. I think here specially of the study of nutrition, of children's diseases, and of maternity in all its phases. Here are immense fields offering problems of the greatest interest, and giving opportunities for service of inestimable value both to the individual and to the nation. Closely linked with these are the possibilities of work in preventive medicine, in the study and management of child welfare, whether in the city, in the school, or in the factory, and in all the applications of physiology and medicine to the lives of women and children engaged in industrial work.

Problems of Nutrition.

I said earlier that the first beginnings of our knowledge of nutrition were already promising to affect deeply the practice of medicine. Is not this a direction in which women should strive to make themselves, so to speak, mistresses in their own house?

It happens here that much of the basic knowledge we are beginning to collect has been gained in the laboratory by medical and by non-medical women. Miss Chick and her colleagues at the Lister Institute have given invaluable service here by work, more particularly, upon the several vitamins. They gave help of the first importance to our naval and military forces during the war by their work upon the anti-scurvy vitamin C and the vitamin B. Miss Chick, again, and her colleagues, Miss M. Hume and Miss Henderson Smith, together with Dr. E. J. Dalyell and Dr. Helen Mackay, of this School, as clinicians, made valuable studies of rickets in Vienna from 1919–22, and to this expedition we owe among other things the first experimental demonstration that ultra-violet light and the vitamin of cod-liver oil are interchangeable in the prevention or cure of rickets in babies. In the past year Miss Chick, with Miss Roscoe, has shown, by refined and laborious experiments, that the growth vitamin A and the antirickets vitamin D for their abundance or deficiency in cow's milk, depend upon the diet of the cow and its access to sunlight. The growth vitamin depends simply upon the supply of vitamin in the cow's fodder. The cow can only transmit it. But the antirickets vitamin, though it may be supplied in the fodder and transmitted by the cow, may also be manufactured afresh in the cow's body under the influence of sunlight. When we think of the dependence of our industrial populations upon the milk of cows commonly stall-fed and kept in the dark, we can realise the inestimable practical value of new knowledge of this sort.

Another woman, again, and another non-medical woman, Mrs. Mellanby, in following up her husband's pioneer work upon rickets as a deficiency disease, has revealed a fundamental relation between the diet before and during dentition and the formation of teeth, the effects of vitamin deficiency being shown both in damage to their general structure and arrangement and in failure of their minute, invisible architecture—that prismatic architecture of the enamel which gives it hardness and its resistance to disease. It seems likely that this discovery will not only transform our outlook on the national problem of dental decay, but give us the true key to its practical solution.

All these studies and others like them give ground for confident hope of an immense increase in our practical powers of repelling disease and of increasing the happiness and the beauty of our people. Research here is costly, painful, and slow, yet the due application in effective practice even of the little we know already seems often to be slower still.

The new knowledge of the vitamins of milk which we owe to Miss Chick and her colleagues has immediate relevance to the problems of human lactation, to the treatment of the expectant and nursing mother, and the management of breast-feeding. This seems to be a field crying aloud for the better attention of women. If the truth were known I venture to think that my sex has done far too little in the proper advocacy of breast-feeding; men have tended, I am afraid, to throw their influence in fact, if not on paper, rather on the other and the wrong side. But even with the better knowledge and the better weapons that research has given, a man after all can only know and apply the physiology of lactation. A woman may know both its physiology and its psychology, and without a knowledge of both the physician is incomplete.

The application of nutritional study to medical practice, whether curative or preventive, surely offers a field of work peculiarly fitted for women. It is not a soft option. It calls for arduous work and highly technical study; it offers problems of great intellectual interest, and at the same time promises high rewards in practical usefulness. In spite of this, however, it does not seem that any significant body of medical women are turning their special attention in this direction.

Defects in Food-supply in Women's Institutions.

This seems in itself to be a phenomenon worth examining. I would ask you to allow me to touch here upon a point which may possibly have some relevant connexion with it. I will put a bold question and hope that you will forgive my candour. Why is it that women following a communal intellectual life are so prone to neglect both the quantity and the

quality of their own food? It is notorious that, speaking generally, women's colleges and other institutions governed by women provide food which is often inadequate in amount, badly chosen, badly cooked, and badly served. All men who have sisters or daughters at college or some similar place become aware of this. It is not enough to say that women are less greedy than men. The deficiencies I have in mind often take the diet below the minimum for due nourishment, while bad cooking is at least as wasteful and indefensible as greed itself. I venture myself to think that the phenomenon I describe, now perhaps beginning to disappear, was originally due to the intellectual fervour of the movement for women's higher education, and that in the pursuit of high thinking plain living was allowed to become bad living. Here has been a great opportunity for medical women, and I believe that enlightened action from your professional side has still immense potency for helping the nation by improving the food and the health of the very girls and women upon whom our best hopes for the national future depend.

Conclusion.

May I finally touch upon one consideration which must be borne in mind in all discussions of divergence between the medical courses of men and of women? The high function of marriage rarely takes a man out of the profession; it must, on the other hand, in most or many instances, remove a woman from practice. This elementary difference is inevitably a large factor in decisions that have to be made when men and women students stand together in competition for educational facilities within hospitals or elsewhere. Time and money spent upon, say, ten men will go to make nearly ten future doctors. The same effort spent upon ten women must give a far smaller future effective output. I hold myself that few, if any, schemes of education are better than a sound medical education as a preparation and equipment for marriage. It should guide and strengthen a woman to perform "justly, skilfully, and magnanimously," all the high and all the lowly tasks of married life. I think a wise student will see to it that in the absence of special reasons she will try to emphasise in her professional training and work those parts of the subject not only best fitted for a woman if she remains in professional practice, but most likely to be serviceable if and when marriage comes to her afterwards.

I know well that I have touched upon several points still the subject of high controversy. Yet it is those who are most in earnest about the future of women in medicine who will be the most desirous that these problems should be raised fearlessly, and that they should find their discussion and their right solution at a place like this, so rich already in the highest traditions of work and service.

DOCTORS AND THE PUBLIC.

An Address delivered at the Opening of the Winter Session at St. George's Hospital on Oct. 1st, 1926,

By E. GRAHAM LITTLE, M.D., F.R.C.P., M.P.,
PHYSICIAN IN CHARGE OF SKIN DEPARTMENT, ST. MARY'S HOSPITAL.

[Dr. Graham Little commenced his address with a eulogy of the personal and teaching qualities of Dr. Howship Dickinson, under whom he worked in close contact at St. George's Hospital, made the closer because the late Lee Dickinson, Howship Dickinson's promising and only son, lived in Dr. Little's house. He went on to say that in dealing with his subject, Doctors and the Public, he intended to take as the text of his address a letter which appeared in the *Times* of Oct. 23rd, 1925, written by Mr. Bernard Shaw. He said:—]

My illustrious countryman is handicapped, but of course not deterred, by a complete ignorance of the subject he criticises, and perhaps for this very reason is more than ever typical of a great mass of public opinion which the profession will do well to recognise is dissatisfied with many of the circumstances attending the practice of medicine to-day. Mr. Bernard Shaw writes:—

> "Unregistered practitioners are at a heavy premium because they have mastered the modern technique of which registration guarantees ignorance. . . . The G.M.C. has become a trade-union of the worst type—namely, the type in which the entry to the trade and the right to remain in it are at the mercy of the union. Not only is the type the worse, but in this particular instance it is at the crude stage of preoccupation with professional earnings and sullen defiance of public opinion, which produced the Manchester and Sheffield outrages in working-class trade-unionism in the last century."

In condemning the obsolete training maintained by the G.M.C., Mr. Shaw remarks that—

> "There is nothing that the unregistered practitioners do that cannot be done by registered ones, if only they are apprenticed to the techniques of to-day instead of to those of a century ago."

The implications are: (1) that medical education of the present day is ill-designed to meet the needs of the public and compares unfavourably with the training, if that word can be used in such a connexion of some branches of unqualified practice; (2) that the medical profession is ruled by an obsolete and tyrannical code of ethics, administered by a body, the General Medical Council, which ought in the public interest to be forthwith scrapped, and that rulers and ruled are actuated by the most sordid motives of self-interest.

The Work of the General Medical Council.

[Examining these criticisms in detail, Dr. Graham Little pointed out that the General Medical Council, so far from maintaining an obsolete training, has resolutely marched with the times by keeping in the forefront of medical education the preventive and clinical aspects. He said:—]

Although readjustments in teaching both anatomy and physiology may be necessary, those subjects must form the basis of all scientific medicine. Again, with the object of laying greater emphasis upon the ultimate end of medicine—namely, the prevention of disease rather than its cure—the General Medical Council has wisely placed in the very forefront of its resolutions adopted in 1922, with regard to professional education and examination the recommendation: "That throughout the whole period of study the attention of the student should be directed by his teachers to the importance of the preventive aspects of medicine." And with the same object of securing the maximum period of study for clinical subjects, these resolutions further recommend: "That a minimum period of three years shall be available for these studies." This period is much more usually four years than three. It is, in fact, in the insistence upon the importance of clinical training that the English School of Medicine has gained its great prestige. . . . . It is precisely in the preposterous neglect of clinical study and the lack of opportunities for pursuing it that the unqualified practitioners compare so very unfavourably with orthodox medical schools. To take one glaring example: The largest osteopathic college in the United States, Kirksville, Missouri, which claims 1000 students, is situated in a small frontier town, the whole population of which does not exceed 4000; one-fourth of this population may be regarded as students of this particular college. The Universities of Oxford and Cambridge, each situated in towns with about 60,000 inhabitants, have wisely regarded the clinical material afforded by such populations as being entirely inadequate for the study of clinical medicine, and their medical students are consequently sent to London for their clinical years. There is no statutory body in the United States comparable to our General Medical Council, and the lack of such an authority accounts for the success of the

bluff by which these colleges pretend to be adequate schools of medicine. Our General Medical Council would, of course, not recognise any medical school as being equipped for clinical study in which the clinical material was limited by a population of 3000 persons.

UNQUALIFIED PRACTICE.

[Dealing with the multiplicity of subjects required by the medical students of to-day, Dr. Graham Little thought that medical education must tend to be more prolonged, it being inconceivable that the time given to the study of the preliminary subjects should be curtailed, while it is impossible to prevent the later subjects becoming more numerous and complicated in sympathy with immense advances in medicine. He drew a parallel between the training of qualified men and that which unqualified persons receive, reminding his audience that in Great Britain alone the legislature encourages unqualified practice, allowing any man to exercise his skill in any branch of medicine or surgery and receive payment without legal penalty unless he should pretend to the position of a registrable qualification. He did not consider that there was any dearth of properly educated medical men in this country making unqualified practice a necessity for the public, seeing the proportion of doctors to the population is 1 to 1400. He continued :—]

The following I consider ought to regulate the attitude of the public towards the medical profession. The words are quoted from a leading article in the *Times* of March last.

"The fatal weakness of the unqualified practitioner is not his lack of a medical degree, but his lack of that knowledge of the disease which, however imperfectly, enables a qualified man to interpret the signs presented by his patient, to distinguish one sign from another, and to relate the signs to prognosis and treatment. Diagnosis, in short, must precede therapy. To contend, then, that the public interest can possibly be served by exempting anyone who is to enjoy the status of a registered medical practitioner from training in those sciences by means of which alone a diagnosis of disease can be made is, on the face of it, ridiculous. There can be no 'back-door' to the Medical Register. Nor can the public suffer for a moment any delegation by doctors of their right to determine the nature of a patient's complaint. Once, however, this crucial matter has been settled and a line of treatment laid down the doctor may delegate, under a general medical guidance, the responsibility of treatment to skilled persons, who do not possess a medical diploma."

The *Times* properly stresses the danger of allowing unqualified and ill-trained persons to undertake the diagnosis of disease. There is another factor than mere ignorance which adds very considerably to this danger and which has not been noticed. At the present day it is more than ever necessary in any case of unusual difficulty that the patient should be examined by several experts, for no one can combine the knowledge which all but the simplest cases require for their elucidation. The unqualified practitioner is by the nature of things debarred from seeking any help whatever. He is afraid to betray his ignorance, or he is met with the real difficulty that reputable persons, quite properly, will not consult with quacks. The result often is that the unqualified practitioner is as isolated in his practice as Robinson Crusoe, and this consideration alone should enlighten the public upon the very real risk of relying upon such isolated and inadequate experience. Notwithstanding these very obvious handicaps to unqualified practice the human impulse to believe the printed word leads vast numbers of the public to swallow both medicine and theories with an equally absurdly misplaced confidence, and the British Isles still enjoy a bad pre-eminence in the consumption of patent medicines as against all other countries, with the possible exception of the United States. Nowhere, indeed, have the quacks more friends than in the present House of Commons, if one may judge by the personal experience I had when bringing in my motion, in February last, for an inquiry into the whole question of unqualified practice, with the object of regulating it. In the very interesting debate which ensued it was amusing to find that speech after speech expounded the thesis that advances in medicine had come invariably from extra professional sources.

The public are, in fact, unaware of the immense strides made in our science and art during the last 30 years, so eloquently described by Prof. Starling.

"When I compare," he writes in his Harveian Oration, "our present knowledge of the workings of the body, and our powers of interfering with and of controlling those workings for the benefit of humanity, with ignorance and despairing impotence of my student days, I feel that I have had the good fortune to see the sun rise on a darkened world, and that the life of my contemporaries has coincided, not with renaissance, but with a new birth of man's powers over his environment and his destinies unparalleled in the whole history of mankind."

The medical discoveries in that period have been far more often made by medical than by non-medical men. The great name of Pasteur is the stick most often used to beat the medical dog, who is accused of having been blind to the significance to medicine of Pasteur's discovery of the causes of putrefaction. But it was Lister, a medical man, who saw its full meaning for surgery, and without Lister Pasteur might very well have passed unheeded by medicine.

INDIRECT ADVERTISING AND COVERING.

[Dr. Graham Little, dealing with the subject of communications to the lay press signed by medical men, thought that the potent influence of the press should be used to disseminate sound expert information which would be useful to uninstructed persons. He was critical of the work of the New Health Society, and in reference to the disciplinary actions of the General Medical Council he said :—]

There can surely be little question that the profession of medicine has advanced in usefulness and in reputation pari passu with the setting up of the General Medical Council. The vast majority of the profession cheerfully accept the ruling of the Council upon methods of professional education and discipline. That the Council in its educational policy follows closely the progress of science is surely very evident from the frequent additions and modification of the curriculum which it initiates; indeed, it is perhaps too ready to accept as gold what is sometimes pinchbeck, and I have hinted at the enormous burden which the addition of fresh subjects throws upon the present student. In its prime duty, that of supervision of medical education, objections to the Council that it lags behind modern advances in science can hardly be sustained. In the matter of discipline I submit that the profession, and not the public, is the best judge as to what degree of control medical men would or should accept—that the control is useful to the public can again hardly be disputed. In the matter of advertisement the Stock Exchange enacts a self-denying ordinance against its members advertising, an ordinance which is clearly of public utility. Medical men should surely enjoy the same privilege of ordering their affairs in this respect as they will. Open advertisement would probably be resented as much by the public as it would be disliked by reputable medical men. In the matter of covert advertisement it is more difficult to differentiate what is legitimate from what is undesirable, but no doubt a via media can be found.

The activities of the Council in restraining the association of registered practitioners with unqualified persons are also greatly misunderstood by the public. It should be emphasised that the offence known as "covering"—that is, the protection which an unqualified man receives from his association with a registered practitioner—may be actually dangerous to the public, and it is from this standpoint that the

Council has framed its professional rule against such "covering." The registered man who breaks this rule does so with full knowledge of the consequences which it entails. Indeed, the consequences are quite frequently desired, inasmuch as a registered man has very much more liberty of action after his removal from the Register, and he is in no way debarred from continuing his practice. He may advertise to his heart's content, and he commonly reaps an enormous advertisement by the mere removal of his name. The unfortunate phrase foisted upon the Council by the wording of an Act of Parliament, "infamous conduct in a professional respect," often creates an unmerited sympathy with the removed person, whose conduct does not appear in the least infamous to the public conscience, by which it is often regarded as a mere breach of professional rule. But if it be kept in mind that this removal means very little more than the omission of the removed person's name from a list of practitioners who prefer to be bound by rules which the removed person wishes to break and does break, much of this misplaced sympathy would be eliminated. It is again to be emphasised that the penal activities of the G.M.C. form only a very small part of its functions.

MEDICINE IN PARLIAMENT.

The comparison which Mr. Shaw makes of the G.M.C. with trades-unions plainly springs from the confusion in his mind between the General Medical Council and the British Medical Association. The latter is a private body which has as much right to make rules for its members as has the committee of a club, and those who do not like to obey those rules have the easy alternative of resigning membership. But the complete inability of the G.M.C. to initiate any disciplinary action is a source of weakness which clearly puzzles the public mind; few laymen understand that unless a change is made in proper legal form by some person or body of persons prepared to take the considerable risk of bringing what amounts to a legal action against the errant practitioner, the Council is powerless to intervene; it acts only as judge, never as prosecutor. In the interest of the public it would seem desirable that some machinery should be provided, such as the institution of a public prosecutor, whose duty it would be to bring the offender to book, and who would be protected from personal loss in the discharge of this duty.

The hostility to the medical profession prevalent in the House of Commons was evidenced by the debate upon my motion dealing with "unqualified practice." It is inconceivable that a similar motion defending practitioners of law from the competition of unqualified practitioners would have met with the same hostility, and of course no practice by unqualified persons pretending to be lawyers is allowed. The reason for this difference of feeling is not far to seek. There are no more than 14 doctors in the present House of Commons; there are something like 200 lawyers. It is difficult to say why doctors should be so poorly represented, and especially doctors in active practice. I believe I may claim to be the only medical man in the House of Commons at present in full and active practice. It should be no more impossible for doctors in practice to be Members of Parliament than it is for lawyers in practice. A man out of practice very soon loses touch with the profession, or, at any rate, ceases to be as representative of medical interests, as the man who is constantly in contact with his fellows. And so I would plead for a more general coöperation on the part of my profession in political problems of to-day, which must, and do, so vitally affect the profession. A certain monetary sacrifice is entailed, more especially because the profession seem to think that when a man goes into Parliament he cannot remain a doctor, and for a consulting physician this may mean serious loss of practice. . . . Action in the House of Commons is far more effective than in any other place, and authoritative information in that assembly, contributed by men engaged in medical work, has never been greater than it is at present.

"EX NIHILO NIHIL FIT."

Abstract of an Address to Students at the Middlesex Hospital on Oct. 1st, 1926,

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THE life-history of a successful man, no matter how great, consists of a prolonged, strenuous struggle. Throughout nature every animal is constantly forced to fight for its existence and search diligently for food, and work may be looked on as the price paid for life. For the successful study of medicine work is essential, and the logical conclusion is that to serve up knowledge to a student in a predigested state must paralyse his effort; mental dyspepsia must be the result. Teaching—or rather cramming—in which the facts of subject are presented to the student without any explanation how the knowledge has been gained only attracts those devoid of ambition, whose only desire is to qualify and make a living. The process is fatal to the evolution of intellectual faculties, and teachers guilty of it are sinning against posterity. The easier it is to get anything the less the desire exists for its attainment, and to make the acquirement of knowledge easy is, perhaps, the best way to increase ignorance. Free education is not the boon it is supposed to be, and compulsory education is impossible and worse than useless. The individual being taught must be an active and willing agent, and all medical study, therefore, should be active, not passive. Most small lectures should be relegated to the dust-heap, though occasional lectures should be given as a stimulus by a master in the subject. A student should attend the courses prescribed regularly and try to gain a clear knowledge of the subject in hand; he comes to a medical school to become an efficiently trained medical man, not to pass examinations.

Work must be purposive and regular if definite results are to be gained. It is foolish to become exhausted by memorising a book so that when an examiner touches the button the record may be produced with painful accuracy. This kind of work is slavery. As a contrast, for instance, there is the student who carefully models freehand the parts of his dissection, building them up to form a solid representation. After an hour's work he deliberately destroys his model, puts the original away, and again attempts to model in freehand. A few days later he tries to model the same part without the original in front of him. He is slowly developing a solid, concrete, stereoscopic X ray image of the human body, which in time will become permanent, and, like his shadow, accompany him everywhere. In the wards and later in his consulting-room it is beside him, at once becoming visible at his command. Diagnosis becomes a simple matter, for thoroughness of work has led to the result aimed at—a full appreciation of the structure and working of healthy and diseased bodies.

It would appear, from which is often said, that when the student reaches his final years of study he is devoid of all or most of the knowledge he has gained in previous years; but obviously he must have learnt something. The truth seems to be that the young fledgeling from a medical school has some knowledge of every subject, but it is not coördinated. He has not been taught in each succeeding stage of his education to make use of the knowledge already gained in the school. Although, of course, any problem in any subject is useful as a mental exercise, and, if overcome, develops the logical faculties and scientific sense, there are problems in medicine so diverse and numerous that it is quite unnecessary and unwise for a student to wander into other fields of knowledge to exercise these faculties. His time is better taken up in coördinating his medical knowledge. The best way to get coördination in knowledge is to prolong the early education into the succeeding

years and to begin the hospital work almost as soon as the student enters the school. Each stage in the education of a medical student should interlock or dovetail with the previous and succeeding stages.

Knowledge should be based on great general principles and students should learn to reason from principles to the special study in hand. A student should not make the mistake of reasoning from the special to the general. He should refrain from depending on his memory. The medical man is a thinking animal, and the practice of medicine depends upon the application of great general principles based upon observation, experience, and research. The sooner a student is set free from his teachers so as to allow experience to be his sole teacher the better for the growth of his real knowledge. Unfortunately, for evident reasons, it is extremely difficult, or almost impossible, to let a student have a direct experience in the treatment of diseases previous to qualification, and it is evident, therefore, that study and work are essential after medical birth and should continue throughout life.

Lack of coördination in the various stages of the student's training is in part due to the fact that the subjects are taught by men who have little experience of the work of later years. This refers to every stage of the student's career, not excepting the final year, for how many clinical teachers in hospitals have any experience of general practice? How many of them are acquainted with the early phenomena of disease by first-hand experience? But are the clinicians not training men to perform duties as general practitioners?—duties of which many are more or less ignorant. Would it be too much to demand that every teacher in a medical school should start life as a general practitioner? Should a general practitioner, an ordinary doctor, not be a member of the staff of every teaching hospital?

Should ordinary catarrhal conditions in children be passed by as of little account whilst rare and incurable diseases, such as acromegaly, are carefully and minutely studied? Is it not better for the future of national health that a student should be thoroughly taught how to recognise and treat a suppurating finger or a common cold, or should a prospective medical man have no knowledge of these mild ailments? Should much of his time be taken up watching from a distance obscure and difficult operations which can only be undertaken by highly trained specialists?

Surely the medical student ought to work for a sound knowledge of the very earliest signs of the disease in addition to studying the pronounced cases which are so common in all hospitals. No attempt should be made at specialism until after graduation. To become a specialist appears to be easy, but gaining the experience and knowledge necessary to be a great doctor is only possible to a few men.

Patients wisely avoid the young doctor, for they do not want to be experimented on. He has thus little chance of studying disease in private. He may deplore that he has chosen so precarious a means of earning a livelihood. He has his chance now, if he will only take it. Let him become a keen student of disease. He should practically live in the hospitals, for he cannot afford to wait for cases at home. Let him realise that he is far from being an expert; let him set about gaining experience. A medical man's first and principal interest should be his profession. Every moment of time can be occupied during this stage in studying cases, working for higher examinations, and becoming expert in the technique of medicine, surgery, and midwifery.

A young practitioner should look forward to a hard life with little remuneration. He will steadily but slowly improve in efficiency and he may add a little to medical knowledge. The practical doctor has greater opportunities to carry on investigations bearing directly on the treatment of disease than the laboratory worker. Prolonged, persistent work gives results, and large unexplored fields are open to all; if the harvest is to be made there must be no strikers, no idlers, no dole-receivers in the profession. Work must be constant. A man simply out to make a living in medicine had better change his occupation and make room for a worker.

It must be clear to anyone with experience that to obtain anything a struggle is necessary, that resistance must be overcome, that work must be done. In other words, it is true that "Ex nihilo nihil fit"—that out of nothing comes nothing.

THE ROUS SARCOMA No. 1.

AN EXPERIMENTAL STUDY.

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IT has recently been claimed by Gye[1] that the infectivity of the cell-free filtrate of the Rous chicken sarcoma is due to the presence of two factors: firstly, an ultra-microscopic particulate body capable of cultivation, and therefore presumably organismal—the "virus"; and, secondly, a labile substance, possibly chemical in nature, believed to be derived from the tissues of the host. These two substances, although individually inert, are capable in combination of inducing Rous tumour formation.

Gye has further claimed that a principle apparently identical with the supposed "virus" is present in certain mammalian tumours and that it can replace that of the Rous tumour, or, in other words, can activate the Rous chemical factor.

The chemical factor, on the other hand, is probably different for each type of tumour and for every species of animal, and it is this fraction, the "specific" factor, which determines the nature and site of tumour formation.

The procedure adopted by Gye for the isolation of these two factors is the following:—

A piece of fresh Rous tumour tissue is dropped into a special serum broth culture medium and incubated for 24 hours. The fluid from such a culture is active, and if injected into a suitable chicken it will produce a Rous tumour. To a culture such as this the name "primary culture" has been given. If incubation is carried on for three days or longer the culture becomes inactive, and when injected into a chicken no tumour results. This inactivity is believed to be due to destruction of the specific or chemical factor by prolonged incubation.

If, however, some fresh active fluid, obtained by grinding up a piece of Rous tissue with Ringer's solution and filtering off the gross particles, is treated by the addition of a few drops of chloroform and by incubation for three hours, it is also rendered inactive, due in this case, it is thought, to destruction of the virus.

Although these two fluids are individually inert, when they are mixed together in equal portions and injected into chickens, tumours appear which in every way resemble the Rous sarcoma No. 1.

Cultures similarly prepared from certain mammalian tumours—viz., mouse carcinoma 63, Jensen rat sarcoma, and rat carcinoma 9, are also used to activate Rous chloroformed filtrate. Gye has also been able to "subculture" the "virus" in a serum broth medium to which chick embryo has been added, the fluid even of an eighth subculture being able to activate chloroformed filtrate.

Almost immediately following the publication of Gye's paper suggestions were put forward by Twort[2] and others that it might be possible to activate Rous chloroformed filtrate (i.e., chemical or specific factor) by agents obtained from non-neoplastic tissues, and such substances as embryo tissue and autolysed tissue have been suggested.

In the investigations described below we have endeavoured, in the first place, to repeat Gye's

experiments in confirmation of the presence of two essential factors in the production of a Rous chicken sarcoma. In the second place we have attempted to determine whether one of these factors, the "virus," can be replaced by agents derived from other malignant growths and from benign tissues. Thirdly, we have attempted the artificial cultivation of the "virus."

Practical and Technical Notes.

In order to avoid unnecessary repetition we shall detail here certain materials and methods used by us throughout this work.

Culture Media.—Hartley's broth, as modified by Gye, was used throughout. Serum was obtained from rabbits by cardiac puncture and added shortly before use. We were rarely troubled with sepsis in the media.

Anaerobiosis.—The McIntosh and Fildes jar was used to secure strict anaerobic conditions and gave very satisfactory results. Air was removed by a Geryk pump, and the degree of anaerobiosis was checked by means of a methylene-blue indicator.

Filtration.—Chamberland filter candles L_1 and L_2 were used in various experiments. L_1 passes many small organisms easily. L_2 is of finer mesh and prevents the passage of *B. prodigiosus*. Suction by means of a small water-pump was used in connexion with these filters. All candles were carefully examined before being used.

Sand-and-paper pulp filters were made up and used as described in detail by Gye and Andrews.[3] "Sand filtrate," obtained by passing a Rous tumour emulsion through such a filter, is a clear, slightly yellow fluid capable of tumour production when injected in very small doses.

Chickens.—Only Barred Plymouth Rock chickens were used. Generally they were about one month old. All the chickens used in any one experiment were of about the same age and size.

Removal of Tumour.—The birds were killed by coal-gas, plucked, and then placed in a solution of weak lysol for five minutes. After this the skin was incised and reflected by means of a cautery. It was then an easy matter to remove the tumour aseptically, and except in our very earliest experiments we were never troubled by sepsis to any extent.

Concealed Contamination.—To begin with, we made a practice of putting up cultures in broth and on agar from all our primary tumour cultures for both aerobic and anaerobic incubation, but we soon found that this was unnecessary and that it was generally quite an easy matter to identify a contaminated culture after the long incubation necessary in these experiments. If the contamination was so well concealed that it did not appear during incubation for three to 12 days, its presence seemed to us to be of little importance. We may add that in some of our earliest experiments, when sepsis was present, it did not appear in any way to interfere with the activity of the "Rous agent."

Silica.—Following the practice of Rous and of Gye we have added a trace of silica to all our fluid injections.

Experiments to Confirm that Two Factors Exist in Infective Fluid.

It was necessary first to attempt to ascertain if Rous infective fluid contained two factors, individually inert but active when in combination. The most important evidence put forward by Gye in this connexion is illustrated by his experiment dated Jan. 14th, 1924. In this experiment he shows that by adding a Rous "primary culture" rendered inert by prolonged incubation to a filtrate inactivated by chloroform a potent mixture is obtained which produces typical sarcomata when injected into chickens.

We have performed a considerable number of experiments in an attempt to confirm this fundamental finding, altogether over 120 fowls being thus inoculated. Three experiments are described in detail below. They have been selected because they represent the various types of results that we have obtained. For convenience they have been renumbered 1, 2, 3.

Expt. 1.—A fragment of Rous tumour about the size of a split pea was incubated aerobically in rabbit serum K.Cl. broth in an Erlenmeyer flask for four days. At the end of this period the supernatant fluid was filtered through an L_2 Chamberland candle. Fresh active fluid was obtained by grinding up a piece of Rous tumour and diluting it with Ringer's solution. This fluid was filtered through sand-and-paper pulp, and lastly through an L_2 candle. Part of this L_2 filtrate was used in the fresh untreated condition, the remainder being subjected to chloroform as described by Gye. Chickens were then inoculated as indicated in Table I. which also shows the appearance and relative size of the resulting tumours.

This experiment confirms in every way the results obtained by Gye. It will be seen that a four-day primary culture of Rous tumour was inactive, as was also a fresh chloroformed filtrate, and that the two, when combined, were very active and produced Rous tumours which killed in 21 and 23 days. It is of interest

TABLE I.

Chick.	Inoculum.	Day. 7	18	23	26	32	40	50
74	4-day culture 1 c.cm.	–	–	–	–	–	–	–
75	Chlor. filtrate 1 c.cm.	–	–	–	–	–	–	–
76	Culture plus chlor. filtrate 0·5 c.cm. each.	–	–	+ (*a*)				
77	Do.	–	+ + + (*b*)					
78	Untreated L_2 filtrate 1 c.cm.	–	–	–	+	+ + + (*c*)		

(*a*) Died 23rd day. (*b*) Died 21st day. (*c*) Died 37th day.

to note that the tumours produced by this mixture appeared earlier and grew more rapidly than that produced by a plain untreated L_2 filtrate—possibly an indication of variation in the resistance of individual birds to tumour growth, a factor which we believe to be very important and to be the cause of much difficulty in the interpretation of experiments of this nature.

Expt. 2.—Fragments of Rous tumour were incubated aerobically in R.S.K.Cl. broth for seven days, at the end of which time the supernatant fluid was filtered through an L_1 candle. "Sand filtrate" of fresh tumour was obtained and subjected to chloroform. Chickens were then inoculated as shown in Table II.

TABLE II.

Chick.	Inoculum.	Day. 8	15	20	26	38	45	60
114	7-day culture 1 c.cm.	–	–	? (*a*)				
115	Do.	–	?	+	+ + (*b*)			
116	Chlor. filtrate 1 c.cm.	–	–	–	–	–	–	–
117	Do.	–	–	–	–	–	–	–
118	Culture plus filtrate 0·5 c.cm. each	–	+ + (*c*)					
119	Do.	–	+ + (*c*)					

(*a*) Died 25th day; small tumour. (*b*) Died 26th day; large tumour. (*c*) Both died 19th day; large tumours.

Unfortunately all our experiments did not work out as satisfactorily as Expt. 1. The chief difficulty which we encountered was the persistent activity of the primary cultures. To obviate this we extended the period of incubation to five, six, or seven days, and even then the cultures remained active when injected by themselves. This is well illustrated in Expt. 2 (Table II.). Chicks 114 and 115 both received an injection of 1 c.cm. of a seven-day culture and developed tumours which appeared on the 20th and 15th days respectively. Even here, however, there is evidence of the presence of two factors. It has been shown that with Rous tumour filtrates the size and rapidity of growth of the tumour bears a somewhat direct proportion to the amount of active fluid injected. Chicks 118 and 119 received half the dose of active culture as compared with the control birds Nos. 114 and 115, yet they developed tumours which appeared earlier and grew more rapidly. The proof of the presence of two factors in this experiment is less obvious than in Expt. 1, owing to the persistent activity of the cultures as seen in chicks 114 and 115.

Expt. 3.—Fragments of Rous tumour were incubated aerobically in R.S.K.Cl. broth for 12 days. No contamination occurred. At the end of this time the supernatant fluid was passed through an L_1 filter. Active 24-hour primary culture of Rous tumour was filtered through an

L_1 candle and then subjected to chloroform. Chickens were inoculated as shown in Table III.

TABLE III.

Chick.	Inoculum.	Day. 8	12	19	25	51
195	24-hour culture chlor. 1 c.cm.	—	—	—	—	—
196	Do.	—	—	—	—	—
197	12-day culture 1 c.cm.	—	—	—	—	—
198	Do.	—	—	—	—	—
201	Chlor. culture plus 12-day culture 0·5 c.cm. each.	—	—	—	—	—
202	Do.	—	?	++	+++ (*a*)	
205	Chlor. culture plus M.63 culture 0·5 c.cm. each.	—	—	(?)	+	
206	Do.	—	—	+	+++ (*c*)	

(*a*) Died 27th day. (*b*) Died 30th day. (*c*) Died 26th day.

To overcome the difficulty illustrated in Table II. we have used increasingly long periods of incubation to obtain an inactive primary culture. The result obtained with a 12-day culture amply justifies this procedure. It will be noted that in this case the "specific factor" was obtained by chloroforming an active 24-hour culture filtered through an L_1 candle in place of the usual sand filtrate, largely a matter of convenience, as any active cell-free fluid, however obtained, should serve.

This experiment, which completely bears out Gye's hypothesis, is described in full to illustrate (1) that even after 12 days' incubation the "virus" would appear to be present unimpaired, and (2) that any technical difficulty found in the making and use of "sand-filters" may be avoided by employing an active 24-hour culture as a source of "specific factor." Chick 201 did not develop a tumour, while chick 202, which received a similar injection, died on the 27th day with a large growth in the pectoral region. This difference we believe to be due to a variation in the resistance of particular birds to tumour growth. Chicks 205 and 206 are referred to later.

Discussion.

Our chief pitfall in performing these experiments has been the prolonged activity of primary cultures, which appears to have been increasing during the past few months and to be related to a gradually increasing virulence of the tumour strain. Thus in our earlier experiments, as illustrated in Table I., three- and four-day cultures sometimes proved inert, whereas now even a seven-day culture may be active by itself (Table II.). Correspondingly, tumour transplants have exhibited an increasing tendency to widespread metastasis-formation and to early destruction of the host. This is to be compared with the experience of Gye and Andrews,[3] whose tumour strain passed into the opposite phase.

On the other hand, the chloroformed filtrate has, in our experience, been almost invariably inactive, only one chick out of a considerable number which received 1, 2, or even 4 c.cm. of the chloroformed filtrate developing a tumour, which appeared as a small nodule two months after the injection. This differs greatly from the results obtained by Harkins, Schamberg, and Kolmer,[4] and it would seem possible that they are right in attributing their faulty inactivation to the particular grade of chloroform used. Throughout our experiments Messrs. Macfarlan and Co.'s chloroform (acetone prepared) has been employed. It is stored in the laboratory exposed to light and therefore probably contains toxic decomposition products which may be responsible for the inactivation previously attributed to the chloroform itself. It is interesting to compare the results of these workers with those of Murphy,[5] who has at no time had difficulty in rendering a filtrate inactive by chloroform.

Our general conclusion from this series of investigations is, therefore, that it lends considerable support to the belief that the Rous tumour arises from the conjunction of two factors. One of these may survive incubation in serum broth for 12 days, but is readily destroyed by chloroform; the other survives exposure to chloroform, but is rendered inert by prolonged incubation.

ACTIVATION OF ROUS CHEMICAL FACTOR BY AN AGENT OBTAINED FROM MAMMALIAN TUMOURS.

Gye has also been able to activate the Rous "specific factor" by agents derived from certain mammalian tumours—a mouse carcinoma, two rat tumours, and a human adenocarcinoma of the breast—and from these observations he draws the general inference that the "virus" is common, at any rate, to many malignant neoplasms.

An attempt was made to repeat these experiments, making use of two mouse tumours, M.63 and 37/S of the Imperial Cancer Research Fund, as our source of "virus." We attempted to follow as closely as possible the method employed by Gye, namely:—

The mammalian tumour was removed aseptically and a fragment was dropped into some Hartley's serum broth and incubated anaerobically for three days. The fluid from the culture was then removed and mixed with an equal amount of chloroformed filtrate of a Rous tumour emulsion. The mixture was injected into Plymouth Rock chickens. Control injections of the chloroformed filtrate alone were always made.

Working with mouse sarcoma 37 we were never successful in activating Rous chloroformed filtrate by the addition of cultures of this tumour. With M.63 we had at first only negative results, but just recently we succeeded in activating a chloroformed Rous culture by the addition of a three-day anaerobic culture of this mouse carcinoma. This is illustrated in Table III., chicks 205 and 206. These are the only two positive results out of 27 chicks thus inoculated. We ascertained later that Gye [6] has never succeeded in activating the chloroformed filtrate by the addition of a culture of 37/S, although he has had frequent successes with M.63.

Murphy claims to have substituted an agent obtained from another chicken tumour and to have succeeded in activating the inert chloroformed filtrate by this means, and thus in part to have confirmed some of Gye's work, although his interpretation of the result is different.

CULTIVATION OF THE VIRUS.

It has been shown by Gye that when a loopful of fluid from an active primary culture of Rous tumour is transferred to a fresh tube of serum broth medium containing a piece of chick embryo the fluid in this "subculture" becomes potent and is able to activate chloroformed filtrate. This is taken by him to indicate life of the virus, more especially since he has been able to carry on this process of subculturing as many as eight times, the eighth subculture being as potent as the first primary culture in its power to activate chloroformed filtrate.

Chicken embryos of from 8 to 16 days' incubation have been used. They are taken aseptically from the shell immediately after its removal from the incubator and placed in R.S.K.Cl. broth in a McIntosh and Fildes jar. To each culture-tube containing embryo serum broth a loopful of an active "primary culture" was added. This "subculture" was then incubated for three to four days. Equal parts of the fluid from this subculture and of inert chloroformed filtrate were then mixed and injected into chickens in doses of 1 c.cm.

We were never successful in activating inert chloroformed filtrate by the addition of subcultures of virus (Table IV.).

ACTIVATION OF ROUS CHEMICAL FACTOR BY AGENTS OF NON-MALIGNANT ORIGIN.

The fact that the medium for a successful subculture must contain chicken embryo has suggested to many the possibility that embryonic tissues themselves may have the power of activation of Rous chemical factor, and thus it is suggested that Gye is in reality dealing

with a growth factor which is not necessarily confined to malignant neoplasms.

The influence of embryonic tissue extracts in promoting the growth of cells in vitro is well established. Somewhat similar factors are said to be found in tissues undergoing autolysis, and it was therefore thought possible that these substances might be capable of activating the Rous chemical factor.

The question of the activation of Rous chemical factor by embryonic tissues has been studied by Gye,[7] who reports that he has tried to replace the "virus" by chicken embryo cultures on 150 occasions without success. This is especially interesting because Murphy [5] has recently shown that he is able to activate the chemical factor by the addition of cultures of chick embryo, rat placenta, and mouse placenta. The discrepancy in the results of these two well-known workers has suggested to Chambers [8] that there is probably some small difference in the technique employed. In her opinion the activating factor may be a product of autolysis, probably chemical in nature, and she further states that such substances have been found in cultures grown under the conditions described by Gye.

In order to test this assumption various products of autolysis were added to Rous treated filtrate. In similar experiments anaerobic cultures of chick embryo, mouse embryo, and mouse placenta have been used. The chief experimental details are as under:—

Chicken embryos were obtained as before and cultured anaerobically for three to four days in serum K.Cl. broth.

Mouse embryo and mouse placenta of varying periods of gestation have been cultured in the same way.

To obtain "growth-promoting" factors under conditions which will exclude the possibility of organismal growth, fragments of Rous tumour and of M.63 tumour have been autolysed at 37° C. in Ringer's solution, to which toluene has been added in the manner described by Chambers and Scott.[9]

Fluids obtained from these different sources have been mixed with chloroformed Rous filtrate and injected into chickens. The total number of these experiments is given in Table IV. On many of the occasions on which non-malignant agents were inoculated experiments similar to our Experiments 1, 2, and 3 were performed, using portions of the same chloroformed filtrate, the activity of which was thus observed.

TABLE IV.

Inoculum (dose 1 c.cm.).	Total No. of chicks inoculated.
Chloroformed filtrate plus "subculture" of "virus"	17
Chlor. filtrate plus chick embryo culture	19
" " mouse embryo "	9
" " mouse placenta culture	11
" " Rous autolytic fluid	7
" " M.63 " "	5

(No tumours resulted in any of the above experiments.)

It will be seen that in all cases in which we attempted the activation of the treated filtrate by the addition of subcultures of "virus," cultures of embryo tissue and of autolysed tissue, we have up till the present obtained only negative results.

MAMMALIAN TUMOURS.

Included in Gye's original paper there is a short but important section dealing exclusively with mammalian tumours and in particular with mouse sarcoma 37.

Many attempts have been made in the past to transmit mammalian tumours by a cell-free filtrate and thus to bring them into line with the Rous tumour. Discussing this matter with regard to 37/S, Gye says that it may be taken for granted that this is not a filter-passing tumour in the same way that the Rous tumour is. He has found, however, that if a piece of this tumour is incubated anaerobically in serum K.Cl. broth for 24 hours, the supernatant fluid, removed and filtered through an L_1 candle, when injected into mice, will produce tumours in a large percentage of cases in about 14 days. These tumours are believed to arise from the cells of the host, which, owing to the action of the injected virus, have become malignant. Gye adds, in further proof that the fluid is cell-free, that tumour cells undergo a fairly rapid necrosis when incubated under anaerobic conditions, and quotes an experiment in which incubation for even 18 hours in Ringer's solution was sufficient to kill off all the tumour cells.

In our earliest experiments we adopted the method described by Gye, using a 24-hour anaerobic culture of 37/S. We injected altogether about 80 mice from a large number of different cultures, but we never succeeded in obtaining a single positive result. Later we modified our technique, and instead of using a plain 24-hour culture we made use of a mixture of equal parts of a three-day culture, presumably rich in virus, and a 24-hour culture relatively rich in chemical factor. We also tried a mixture of a three-day anaerobic culture of mouse carcinoma 63- and 24-hour culture of 37/S. In all these modifications, as in the original experiment, we were unsuccessful and no tumours resulted.

While performing these experiments we also tested the power of survival of tumour cells when incubated anaerobically in serum broth, and we found that in the case of tumour 37/S the cells survived as long as three days, and when transplanted into mice produced tumours in the usual way. Carcinoma 63, however, only survived about 24 hours. This result is very similar to that obtained by Okamoto [10] working with certain other mammalian tumours, and indicates the importance of adequate filtration of the cultures.

SUMMARY.

Some of the experiments described by Gye in relation to the Rous chicken sarcoma and other neoplasms have been repeated. The behaviour of certain non-malignant tissues under similar experimental conditions has also been observed. The following conclusions have been reached:—

1. Experimental results are recorded which largely tend to confirm the presence in Rous sarcoma fluid of two causal factors which, individually inert, in combination give rise to tumour growth. One of these factors, the "virus," will survive prolonged incubation, but readily succumbs to exposure to chloroform. The other, the "specific factor," is little affected by chloroform, but is rendered inert after a period of incubation depending upon the activity of the particular strain of tumour used.

2. The "virus" of the Rous tumour has been replaced, in a small proportion of experiments, by an agent derived from a mammalian tumour (mouse carcinoma 63).

3. We have been unable to replace the "virus" by agents derived from mouse sarcoma 37, certain embryonic or placental tissues, or by "growth-promoting factors" in autolytic fluids.

4. We have been unable to "subculture" the "virus."

5. Our experiments throw little light upon the nature of the two factors involved. The terms "virus" and "specific factor" are used for convenience only.

6. We have been unable to transmit mouse sarcoma 37 by injections of a cell-free culture fluid.

7. Incidentally it has been shown that the malignant cells of 37/S may remain alive under strictly anaerobic conditions for as long as three days.

8. Variation in the susceptibility of individual animals to tumour growth constitutes a factor which must be taken into consideration in the interpretation of experiments of this nature.

This work must only be considered as a preliminary to a further and more extensive study of the Rous tumour and its relationship to tissues simple and malignant.

In conclusion, we should like to thank all those who have so kindly helped us in the carrying out of this work. Especially we would gratefully acknowledge our indebtedness to Prof. D. P. D. Wilkie for the great personal interest which he has taken in this research and for the facilities for work which he has so unreservedly placed at our disposal in the newly-equipped department of experimental surgery. We

are indebted to Prof. J. Lorrain Smith, F.R.S., and Prof. T. J. Mackie for the help and encouragement which they have given us. Our thanks are also due to Dr. W. E. Gye, who has personally demonstrated to us the more important points of his technique, and supplied us with a strain of the Rous tumour, and to Dr. Thomas Lumsden, of the Lister Institute, who first instructed us in the management of transplantable tumours.

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SOME POINTS IN THE SURGICAL MANAGEMENT OF SEMINAL VESICULITIS.*

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IT is probable that no part of the urogenital system in the male is so neglected as the seminal vesicles, and yet they are implicated much more frequently than is generally supposed. Their natural defence is very poor; they are tortuous cul-de-sacs with blind diverticula lined by columnar epithelium, the whole arrangement lending itself ideally to the harbouring of infection. Moreover, the only route of natural drainage is via the ejaculatory ducts, which open into the deep urethra, itself a frequently infected cavity with none too effective drainage.

Classification.

The classification of seminal vesiculitis is at best empirical. Four clinical types may be recognised: (1) Infected, (2) hæmatogenous, (3) obstructive, (4) traumatic.

1. *Infected Vesiculitis.*—This group includes such cases as those occurring in a spreading gonorrhœa, the local spread, either direct or indirect, of a *B. coli* or pyogenic infection of the urinary tract. Infections such as bilharzia and actinomycosis are also included in this group.

2. *Hæmatogenous Vesiculitis.*—Many types of infection, such as syphilitic or tuberculous, reach the vesicle via the blood stream, as do also infections from obvious septic foci in teeth, tonsils, or alimentary tract.

3. *Obstructive Vesiculitis.*—In this group are included cases where the poor drainage of the vesicle is further interfered with by such mechanical factors as changes in the prostate consequent on adenomatous or carcinomatous conditions. The ejaculatory duct is either pressed on or deviated, and the vesicular secretions dammed back, resulting in an irritative inflammatory condition of the vesicle. Infection may be superimposed.

Masturbation is responsible for a form of vesiculitis which may be included in this group. The habit produces a condition of complete atonicity of the vesicle accompanied by a local congestion of the prostate, which increases the difficulty of the vesicular discharge in finding its way out, and the atonic vesicles are entirely unable to surmount it. Congenital anomalies may also give rise to a vesiculitis of the obstructive type. Obstructions, such as inflammatory stricture of the duct, are not included in this group.

4. *Traumatic Vesiculitis.*—Trauma directly applied to the vesicle is the prime cause of a number of cases of inflammation. Ill-applied massage is the commonest. Rough treatment by the rectal finger, in the course of a suprapubic prostatectomy, is frequently the origin of a post-operative vesicular flare-up.

Clinical Picture.

By far the commonest infection of the seminal vesicles is extension of gonococcal inflammation, and to such cases, therefore, our subsequent remarks will be confined. In acute vesiculitis the symptoms may vary within wide limits. There may be straining and painful urination, often amounting to vesical tenesmus; constant shooting pains in the perineum, epigastrium, rectum, and anus; direct and referred pains on urination and defæcation; retention of urine; vomiting; tympany; constipation; abdominal tenderness; persistent erections and painful blood-stained emissions. Such a picture is accompanied by a hot, tender, fluctuating vesicle, swollen and enlarged, and bulging ominously in the entire space immediately above the prostate. On the other hand, the vesicles may be involved in the course of an acute gonorrhœa with no local symptoms, and the examining rectal finger may fail to detect the parenchymatous changes in the gland.

It has been said that vesiculitis is always bilateral, but in our experience it was not rare to find gross vesiculitis in one vesicle, while the other vesicle had a normal exudate, was normal to rectal touch, and gave a ventriculogram which, in contrast with its fellow, showed no radiographic evidence of disease.

The clinical picture of chronic vesiculitis is equally varied. There may be no symptoms, so that the implication of the vesicles is only discovered as the result of a precipitate joint attack, an unresolving iritis, a phlebitis of the internal saphenous vein, or merely a routine rectal examination. On the other hand, a patient may suffer from a recurring gleet, a recurring epididymitis, irregular bouts of urgent urination, indefinite pains in the lumbar region, flanks, and thighs; alteration in sexual powers and sensations, aching pain in the testicles, or pronounced symptoms of sexual neurasthenia. It is well known that the gonococcus may live unsuspected in the vesicles for many years, and then may suddenly acquire new virulence and assume pathological importance. Iritis in men over 50 is not infrequently due to a gonorrhœa of some 20 or 30 years before. The significance of the vesicles is well known as the focus of infection in gonorrhœal arthritis.

The symptomatology may be that of a kidney or bladder lesion and only on full investigation is the vesicle found responsible. The ureter, for example, may be involved in the infiltration of a perivesiculitis, and kidney changes ensue.

The normal vesicle is impalpable unless greatly distended. The acute condition accompanied by a hot, exquisitely tender, swollen, fluctuating vesicle is straightforward, but the chronically infected vesicle, with its infiltrated walls matted together in a perivesiculitis, without accompanying swelling, sclerosis or pain, is often extremely difficult to define by rectal palpation. Should secretion be obtainable, it is found to contain pus and bacteria. Frequently, however, the inflamed vesicle is not draining and secretion cannot be obtained. Even under such circumstances no great swelling of the gland can be made out per rectum.

It may happen that an acute vesiculitis exists while the urine in all three glasses is clear and free from pus or other débris. Kidd describes a dull thin haze of pus, of a peculiar and characteristic appearance, as diagnostic of vesiculitis, but we have found interpretation of the urine very much more difficult.

* A paper read before the Twentieth South African Medical Congress. Since its delivery we have had to chronicle the death of Dr. Reith Fraser.

Indeed, the urines of two cases of vesiculitis are very seldom alike. Much depends on the state of the urethra and prostate. If these are not implicated, and the vesicles are not draining, the urine is invariably clear. Indeed, gonococci have frequently been recovered from the vesicles of men suffering from iritis, who have passed clear urines for over 30 years. In these cases diagnosis can only be made by rectal palpation of the vesicles, combined with bacteriological examination of the secretion.

Vesicular Massage.

Many writers are enthusiastic about the efficiency of vesicular and prostatic massage, while others regard it as of little use, although, conservatively, it is the best method at our disposal. Keyes tells us that "a constipated movement of the bowels will often squeeze out more semen from a boggy prostate than any finger can. A seminal emission is never so small as the few drops extruded by massage. Yet, for the period between the subsidence of acute gonorrhœa and the return to cohabitation, massage is the best alleviation we have to offer for the treatment of chronic prostatitis and vesiculitis."

It must be recognised that an emission during acute vesiculitis is a deleterious trauma, while in the chronic state the resumption of normal sexual function is the basis of cure. Indeed, as Keyes remarks, "sexual starvation or gluttony is as bad for the chronically inflamed sexual organs as constipation and gluttony are for the chronically inflamed digestive organs." Unskilled and indiscriminate massage certainly does little good. Massage is an intelligent manœuvre and must be carried out intelligently, with due regard to the pathological condition. It is idle and frequently harmful to massage blindly until either the finger or the patient tires. The object of massage is to improve the circulation of the parts, increase the muscular tone and, as far as possible, secure free drainage. Thus certain cases require severe massage, while in others only the mildest manipulation is sufficient. Nor must it be forgotten that vigorous massage on occasion may precipitate an acute vesiculitis, prostatitis, or epididymitis.

There is a very large percentage of cases, however, which fail utterly to respond to such conservative methods. It is true that many are benefited in the most astonishing manner by the administration of three or four doses of normal horse serum, some foreign protein such as aolan or casein, or intravenous sulfarsenol, but a large number still remain unresolved. Hot rectal douching, diathermy, urethrovesical irrigation, accompanied by urethral dilatation and the removal of any urethral focus, have been employed pari passu with vesicular massage without avail. The percentage of such cases is very high indeed.

Catheterisation of the Ejaculatory Ducts.

One other conservative attempt to secure drainage of the vesicles made by urologists is catheterisation of the ejaculatory ducts. Urethrovesical irrigations and dilatation of the deep urethra are first carried out until a large urethroscope tube can be introduced without trauma. Under local applications the veru rids itself of its pathological products. When this stage is reached the prostatic utricle and ejaculatory ducts are explored. Luys maintains that catheterisation of these canals is necessary in the majority of instances and absolutely indispensable in many.

This difficult procedure has also been carried out by Young, of Baltimore. Kidd, however, states that it is not possible to catheterise these ducts except in a few cases. McDonagh is equally emphatic, concluding: "I have yet to see a case in which such a procedure has been successful." Our own experience has been that in a urethra of more or less normal anatomy it is not unduly difficult to persuade a Young's double tube to enter the orifices of the ejaculatory ducts; but to inject medicament is another matter, as it regurgitates into the urethra and none enters the vesicle. Endeavours to persuade the catheter farther along the duct have invariably terminated in traumatism. In a pathological urethra we have frequently failed to locate the ducts with sufficient accuracy even to allow of an attempt at catheterisation.

Diathermy.

Cumberbatch and Robinson have described their methods of dealing with seminal vesiculitis by means of diathermy, and are satisfied that the "treatment possesses therapeutic value in cases of gonococcal prostatitis and vesiculitis," but it is extremely doubtful if diathermy alone will cure vesiculitis. As an adjunct to other measures, however, it is a line of conservative management of undoubted value.

Vasotomy and Vasostomy.

The operation of vasostomy, first advocated by Belfield, has proved a distinct advance in the treatment of seminal vesiculitis, and the principle of applying medication to the vesicle via the vas has found a definite place in the treatment of these structures.

The operation consists essentially of :—

1. By means of digital manipulation through the shaved and purified skin of the scrotum, the vas is separated from the remaining structures of the cord and fixed by means of a transfixing needle on the scrotal side of the penoscrotal angle.
2. An incision of 1 cm. is then made with a sharp scalpel, directly over the vas thus fixed, and the vas lifted free from its connective tissue coverings.
3. An incision with a fine-pointed blade is made longitudinally into the stripped vas and the lumen exposed.
4. A blunt-pointed needle is introduced into the lumen and through this the medicament is injected.

The operation can be performed under local anæsthesia without any complaint of vesicular colic, and after a little practice can be completed in from 5–10 minutes. Many modifications of the procedure have been advocated. Some observers report methods of "percutaneous puncture," but we have found it sufficiently difficult to be certain of entering the lumen of the vas when it is fully exposed and clean. Puncture of the vas with a sharp needle, after it has been freed, is less satisfactory than first incising longitudinally. A longitudinal incision makes one absolutely certain of entering the lumen, and a longitudinal slit is less damaging to the vas than a transverse one.

In the early cases of our series, selected for operation on account of the chronicity of the condition, we used the Belfield technique of ligaturing the edges of the vas incision to the edges of the skin to facilitate repeated injections, but local œdema and lymph exudate made it difficult to find the lumen to reintroduce the needle. We tried tying a needle within the vas, passing a strand of fine silkworm-gut along the vas for a distance of 5–6 inches. A needle could be threaded over this and introduced into the vas on the principle of a tunnel bougie. Before withdrawing the needle the gut was replaced through the needle and the needle withdrawn over it and the gut left in. This procedure we still adopt if for any reason we desire to give more than one injection within 48 hours.

In three of our cases where the vas was retained at skin level for repeated injections it could not be returned to the deeper scrotal tissues on account of rigid adhesions, and spermatic fistulæ developed.

In view of these difficulties we tried single large injections of a stronger chemical (25 per cent. argyrol), returning the vas immediately, after washing the chemical through with 1 or 2 c.cm. of saline and closing the wound with a single Michel clip. The injection is made with a 10 c.cm. record syringe, and continued until a definite resistance is felt, or 15 c.cm. have been injected. In some cases the resistance increases and then suddenly gives on slightly increased pressure, and in these we have found by urethral catheter that at the moment of "give" the black argyrol enters the urethra. Where no resistance at

all is felt the argyrol flows through to the urethra almost at once. Where resistance is felt, after, say, 6–10 c.cm. have been injected, no medicament is recovered immediately from the urethra, and in these cases it is our practice to leave the medicament within the vesicle.

In some cases after a varying time the urine shows the drug; if none has appeared in the urine at the end of 48 hours we proceed with gentle vesicular massage, in the course of which the distended vesicle can often be felt to collapse, evacuating its contents.

In these cases it has been easy to appreciate the difference in the effect of vesicular massage, which before operation gave a scanty result, but afterwards succeeded in effecting the evacuation of the vesicular content.

In one case only has there been any suspicion of rupture of the vesicle. In this case definite symptoms of rectal irritation and an indurated mass, palpable per rectum, appeared within 24 hours of operation, but the symptoms subsided after hot rectal douching.

We have found the above procedure of great value in clearing the chronic type of case so graphically described by Kidd, and in the acute case of almost equal value. In every case a course of massage, vaccine, urethral dilatation and instillation, &c., is carried out subsequently.

In a type of case, which must frequently pass as "typhoid," a vasostomy has exaggerated the temperature and toxæmia for 24 hours, and then with the appearance of the argyrol in the urine the temperature has dropped, as it does after the evacuation of pus from an abscess. We employ vasotomy as a routine in epididymitis cases calling for epididymotomy and have observed no tendency to relapse.

In certain cases where we have been able to introduce medicament the vesicle appears to be loculated, so that only the portion in proximity to the ejaculatory duct drains satisfactorily. The rectal feel of such a case is always that of a firm, sclerosed, not much distended vesicle.

Value of Vasostomy.

The most important criticism of vasostomy has been that it tends to cause stricture of the vas and, if bilateral, probably sterility. The objection is not entirely groundless, especially if the vasostomy is kept open over a fairly long period, though there is less tendency to stricture formation than might be imagined, and with our procedure it is to all intents and purposes negligible. The danger of stricture lies mainly in the amount of damage caused to the vas from trauma at operation, subsequent manipulation with the risk of secondary infection, and the damage directly due to the injection of strong chemicals. These causes are minimal with one single injection well washed through and the wound immediately closed. We do not consider it advisable to keep the wound open longer than 48 hours, and if more injections seem indicated we prefer to carry out a second vasotomy.

On reviewing the literature we have been struck by the tendency of certain observers to credit vasostomy with immediate and complete cure. Our own view, however, is to regard the operation as an adjunct of very great value to conservative measures. It initiates resolution and renders conservative manœuvres, previously futile, effective. Its greatest value consists in shortening the length of treatment (probably by 75 per cent.) and in converting a case which will not respond to conservative measures into one that will. The fact that the operation can be performed under local anæsthesia adds greatly to its practical value.

Vesiculotomy and Vesiculectomy.

In contrast with the facility of attacking the vesicle via the vas, direct attack with vesiculotomy or vesiculectomy is an operation of great gravity. The perineal route requires an experienced operator. The goal to be reached is not easy from the anatomical standpoint, and the danger of injuring important structures, particularly the rectum, is very real. However, certain cases demand direct attack; in particular, those with acute inflammatory retention in the vesicle; old-standing sclerotic cases occasioning pain, neurosis, or focal infection; cases of ischio-rectal abscess originating from a ruptured vesicle, and cases where ureteral obstruction has resulted from involvement of the ureter in the sclerotic infiltration of a perivesiculitis.

Vesiculectomy is the operation of choice, and only when actual excision of the vesicle is too difficult is vesiculotomy indicated. Care must be exercised to open the vesicle as completely as possible, to scrape its walls with a sharp spoon, and apply pure carbolic to the curetted area. Occasionally only, in an acute case, where vasotomy has failed, is simple incision of the vesicle required, along the lines of a Squire's vesiculotomy.

Summary of Cases.

This communication is based on a series of 32 cases in which operation has been performed. These have been selected from a consultant practice in which probably a much greater percentage of old-standing infections is met with than in an ordinary venereal clinic. The number operated on is approximately 10 per cent. There were three cases of vesiculectomy, in all of which there was ureteral obstruction, one case of vesiculotomy for acute toxæmia with high fever which vasotomy failed to relieve, and 28 cases of vasostomy or vasotomy.

The four cases of vesiculectomy or vesiculotomy resulted in complete symptomatic cure and the removal of all signs of disease. In the remaining 28 cases the vesicle was attacked via the vas, 24 bilateral and 4 unilateral. Of these 11 were vasostomies receiving more than one injection, while in the remaining 17 vasotomy was performed and a single injection made. There were three cases of spermatic fistulæ, all of which followed a vasostomy. The fistulæ were subsequently closed by releasing the vas and burying it. In one case there was suspicion of vesicular rupture following injection, but resolution eventually took place and no untoward consequences were noted. No other unfavourable complication was noted in this series.

In one acute case the result of vasotomy was dramatic, the temperature falling to normal within 12 hours. In the remainder after-treatment was continued for periods varying from three weeks to twelve months before the patient's urogenital system was pus-free, the average being eight weeks.

Conclusions.

From the foregoing discussion three conclusions may be drawn: (1) Conservative methods in the management of gonococcal vesiculitis still hold a premier place. (2) Vasotomy is a surgical procedure which shortens the duration of treatment without serious risk to the patient, and does not carry the tendency to sterility, spermatic fistula, and scrotal nodulation and infiltration which is associated with vasostomy. (3) In cases where direct attack on the vesicles is called for, vesiculectomy holds a distinct preference to vesiculotomy.

STOCKTON HOSPITAL EXTENSION.—Princess Mary Viscountess Lascelles, on Sept. 23rd, opened the extensions to the Stockton and Thornaby-on-Tees Hospital completed at a cost of £71,000. Sir Frank Brown, who presided, said that it was 64 years since the hospital was founded without endowment of any kind, and it was the boast of Stockton and Thornaby that the hospital had never been in debt—largely owing to the energy and munificence of the Mayor of Stockton, Mr. Leonard Ropner, who had given the final £5000 required besides a previous donation of £10,000. The teachers and school-children, he said, had provided the whole of the cots and beds required for the children's wards, while the builders and operators in the district had built a separate building for the nursing staff.

Clinical and Laboratory Notes.

A CASE OF PERFORATED GASTRIC ULCER WITH APPENDICITIS; OPERATION; RECOVERY

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THE following case is interesting on account of its rarity.

History.—A man, aged 24, first attended the surgical out-patient department at King's College Hospital in September, 1925, complaining of abdominal pain, which had been present on and off for a month before the patient came to hospital. There was no history of vomiting; he was constipated, often having only one action in two or three days. On examination he was seen to be a well-built, muscular man; his teeth were very decayed and there was well-marked oral sepsis. The abdomen moved well on respiration, and the only area where tenderness could be elicited on palpation was over McBurney's point, pressure here causing the patient to feel sick. The appendix was palpable and retrocæcal in position. The case was diagnosed as chronic inflammation of the appendix and his name was taken for admission, and arrangements made for dental treatment before he was admitted to hospital.

The patient was not seen again until five weeks later, when he was admitted to King's College Hospital with acute abdominal pain; temperature 100·2° F., pulse 104, respirations 24. He stated that he had been suddenly seized with pain ten hours before admission, and had vomited several times; the pain had continued without intermission. He looked anxious and worn, in fact he was a typical picture of an acute abdomen. On examination the abdomen was rigid all over, but if anything the rigidity seemed most marked in the right iliac fossa. There was no loss of liver dullness and no pain over the right scapular region. A diagnosis of acute appendicitis was made and the patient was taken to the operation theatre. Under gas and oxygen anæsthesia a definite palpable lump was discovered in the right iliac fossa and the diagnosis seemed certain.

The abdomen was opened through a right paramedian incision. On opening the peritoneal cavity a quantity of sero-purulent fluid escaped. The cæcum and appendix were completely covered by omentum; the appendix was retrocæcal in position, and on removing the covering omentum two large concretions were exposed which had ulcerated through its acutely inflamed walls. Large adherent patches of coagulated lymph were seen on the surface of the appendix. The appendix was removed and its stump invaginated by a purse-string suture. A portion of the acutely inflamed omentum was removed between ligatures. On replacing the omentum within the abdomen a quantity of sero-purulent material with isolated flakes of coagulated lymph escaped from the wound; the upper abdomen was explored with the hand and a hard indurated area was felt at the pylorus. On withdrawing the hand gas was heard to escape. The abdominal incision was lengthened in an upward direction and the stomach explored. A large perforation was seen on the gastric side of the pylorus; the size of the perforation can be judged when it almost admitted the tip of the little finger. There was considerable board-like induration around the perforation, and invagination of the ulcer was impossible. The perforation was plugged with a portion of omentum which was stitched in situ; the condition of the patient did not warrant a gastro-enterostomy being performed. The abdominal incision was closed and a large rubber tube draining the pelvis was inserted into the lower end of the incision. The patient was returned to bed and continuous rectal saline was administered. Recovery was uneventful; the drainage-tube was removed on the fifth day, by which time the patient was having light diet. The wound had completely healed by the tenth day when the stitches were taken out. The patient was discharged from hospital three weeks after his operation and was sent to a convalescent home.

In January, 1926, the patient was examined again; he appeared in good health and the abdominal wound was soundly healed, there being no evidence of a ventral hernia. A barium meal was taken which demonstrated considerable pyloric stenosis, due to the cicatrisation of the ulcer. The patient was advised to come into hospital again and have a gastro-enterostomy performed; this he agreed to do. On Jan. 15th a posterior gastro-enterostomy was performed; the ulcer at the pylorus had healed and the omentum was stretched over it in the form of a web. The pylorus was not occluded by a suture. Recovery was rapid and uneventful, and the patient was discharged on Jan. 30th.

Commentary.

Cases in which two acute abdominal conditions occur at the same time are rare, especially so when the stomach and the vermiform appendix are the organs concerned. Very few cases are to be found in looking through the medical literature, the best recorded cases being those of Sir Watson Cheyne and Wilbe,[1] Warren Low,[2] and Lediard and Sedgwick.[3]

On investigating the pathology more fully, one might expect the two conditions to be more frequently associated, as a diseased appendix is often the indirect cause of ulceration of the stomach. That the vermiform appendix and the pyloric portion of the stomach are in direct lymphatic connexion has been well demonstrated by Braithwaite.[4] There is also a definite venous return to the stomach in cases of chronic inflammation of the appendix where the omentum is adherent; this probably occurs via the epiploic veins directly to the gastric mucosa.

A CASE OF ANILINE POISONING.

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A CASE of poisoning by aniline ($C_6H_5NH_2$) in a boy aged 12 years occurred under the following circumstances.

A lesson in distillation was being given to a chemistry class, aniline being the substance used to demonstrate this process. As the aniline was to be returned to stock after distillation, the master told the boys to be careful that no water was mixed with it. One boy distilled his portion into a wet flask, and when he handed it to the master, the latter said, in a jocular manner, "This is a nice mess. It is not fit to be returned to the bottle. You might as well drink it." This the boy proceeded to do. The master immediately dashed the flask from the boy's hand and made him wash out his mouth. The flask contained less than 2 c.cm. of a mixture of aniline and water, and the master was under the impression that the boy had not swallowed any of it.

The boy carried on at school from 9.45 A.M., the time of the incident, and made no complaint nor did anyone notice anything amiss. At 12.20 he took train to his home and arrived at his station without mishap but collapsed outside at about 12.45, and was carried home. He was then unconscious, the finger-tips were blue and the lips almost black. Oxygen was administered continuously through a funnel from about 1 o'clock and coffee and whisky given frequently from then until 4 o'clock. He vomited repeatedly from 2.30 onwards and at 3 o'clock was roused enough to say that he had taken aniline but immediately relapsed into unconsciousness.

Seen at 10 P.M. he was lying peacefully in bed with his eyes shut. He was very drowsy but could be roused with difficulty when he would open his eyes, but would not answer questions. The skin was a pale lilac colour all over except that the lips, ears, tongue, and the nails of the fingers and toes were of a deep leaden blue. The respirations were slow and very shallow. There was no apparent respiratory distress. The pulse-rate was 120 and the pulse regular and small. There was no dilatation of the heart and no abnormal signs were detected in the lungs. The pupils were widely dilated and reacted very sluggishly to light. There was no injection of the conjunctivæ. There was no paralysis. The tendon reflexes were somewhat diminished.

As it was so long since the ingestion of the poison and he had vomited repeatedly, there seemed to be no point in washing out the stomach. Oxygen was given through a nitrous oxide bag for five minutes at a time with intervals of 15 minutes instead of constantly through a funnel. Very

[1] W. Watson Cheyne and H. Wilbe: THE LANCET, 1904, i., 1641.
[2] V. Warren Low: Ibid., 1904, i., 1789.
[3] H. A. Lediard and R. E. Sedgwick: Ibid., 1904, ii., 761.
[4] L. R. Braithwaite: Arris and Gale Lecture, 1923, Brit. Jour. Surg., 1924, No. 11, p. 7.

soon there was improvement. The patient became less drowsy and began to resist the application of the face-piece of the gas-bag until consciousness was restored sufficiently for him to be reasoned with, after which he took the oxygen well. After about three-quarters of an hour he had recovered sufficiently to sit up and take some tea, the dilatation of the pupils had become much less and the colour had improved greatly. He was then given mag. sulph. ʒii. with tr. belladonnæ ℥v. and water to ʒii. Oxygen inhalations were continued until noon the following day when they were no longer necessary. The mag. sulph. mixture was repeated twice on successive days.

Progress was uneventful. He felt no ill-effects except headache, which persisted for three days. The blueness gradually cleared off, and was completely gone after three days.

Three weeks later he felt quite well and showed no sign of any ill-effects. He stated that he had less than a teaspoonful of the mixture of aniline and water in his mouth, and thought that he swallowed some of it but was not sure how much. After taking it he noticed a burning sensation in his mouth and immediately began to feel dizzy. The dizziness increased but he was able to go on with his work. Just before he got on the train on his way home, two and a half hours after taking the aniline, he noticed that his legs were becoming weak and that the dizziness was much worse.

Commentary.

Poisoning by aniline may take place in a variety of ways. Glaister[1] quotes cases where poisoning resulted from the application to the ear of cocaine in equal parts of aniline and rectified spirits, where babies were poisoned by napkins which had been marked with marking ink consisting of aniline chloride, where children were poisoned by wearing yellow boots which had been stained with an aniline preparation, and several where poisoning took place through the unbroken skin in workers in industries where aniline was used. It is important to remember that aniline is a constituent in many marking inks.

A point of interest in this case is the demonstration of the importance of using a gas-bag when giving oxygen. This patient had had oxygen given by the funnel method for nine hours without any appreciable effect, and on resorting to the gas-bag an immediate effect was noticed. Skilled attention is not required when oxygen is given from a bag. In this case the boy's mother could use it efficiently after a few minutes' demonstration. The method of giving oxygen through a funnel is both wasteful and ineffective.

I am indebted to Dr. E. J. Burnett for the privilege of seeing this case.

A CASE OF INFLUENZAL ENCEPHALITIS.

BY HERMAN S. N. MENKO, L.R.C.P. & S. EDIN., L.R.F.P. & S. GLASG.,

CLINICAL ASSISTANT, HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

THE obscure symptoms and unusual course in this case present several features of interest.

M. K., a girl aged 4½, showed spots on her body which had been diagnosed as urticaria. Lotions were applied but did not improve the condition. On the seventh day after the appearance of the spots the temperature suddenly rose to 104° F., which remained constant all day. In the evening I was called and found the following: abdomen covered with a rash typical of lichen urticatus; there were also spots on the child's arms and legs; pulse very frequent. Nothing else was found on examination.

The next day the temperature persisted and remained high, without remission. All means and methods of reducing it failed. Quinine had no effect whatsoever, which was rather remarkable, as will subsequently be noted. A consultation was held, but nothing was definitely ascertained beyond the fact that by now the child had severe diarrhœa, with stools which became more and more offensive, and had very much the appearance of those of typhoid. A culture of the stools revealed large growths of *B. coli*, which were also found in large quantities in the urine. The culture did not show any typhoid organism.

There was no doubt at this stage that one had to deal with a definite intestinal toxæmia, and owing to the fact that large numbers of *B. coli* were present, potassium citrate was given in large doses, and colon lavage applied. The child did not improve in the least for three days, in fact, the temperature remained at 104°, and the condition grew rapidly worse, until collapse occurred, and the child to all intents and purposes was in a moribund condition.

After pulse and heart had stopped for about 30 seconds the patient rallied. The same evening another consultation took place, and in view of the fact that alkaline treatment had no effect, hexamine was started, while rectal salines were given frequently, lactic acid and glucose being added to the salines, and whey given by the mouth. No improvement occurred, and after the second day from the beginning of this treatment the child passed into a state of lethargy. Nervous symptoms now made their appearance, some head retraction was noticed, and on the left side Kernig's sign was present. There was also exaggerated extensor plantar reflex; speech had gone, and the patient was unconscious with incontinence of urine and fæces.

The next day, as no improvement was evident, a cerebro-spinal puncture was done, and about 6 c.cm. of clear fluid withdrawn. The fluid was from all points of view normal except that it was under increased pressure. In the night following the puncture the temperature for the first time began to fall. The head retraction disappeared, but some paralysis on the left side persisted. A catheter specimen of the urine showed a very large amount of acetone, the urine being strongly acid. Again alkaline treatment was resorted to, and potassium citrate in large doses given, while rectal salines and saline injections by the buttock, 10 c.cm. at a time, were given.

In the next three or four days the child did not improve and the temperature remained high, although it never reached the same height as before the puncture. Another consultation took place, particular attention being paid to the condition of the central nervous system. Clinically it was decided not to be a case of encephalitis lethargica. Quinine was given again, and the temperature began to fall in contrast with the earlier experience of its use. Gradually everything became normal, speech came back, and the child is making an excellent recovery.

The following difficulties presented themselves in this case: the total absence of any symptoms; the variations in the phenomena observed; the extraordinary reaction of the patient to drugs; the appearance of a rash, which had manifested itself before the onset of fever for ten days. This case, no doubt, was one of severe toxæmia, leading to an influenzal encephalitis. The value of examining the cerebro-spinal fluid shows it not only as a great help for diagnosis, but also, in my opinion, from the therapeutic point of view.

I wish to express my indebtedness to Dr. Theodore Thompson, Dr. Eric Pritchard, Dr. Wilfred Harris, and Dr. Ellison for their valuable help and advice.

[1] Prof. Glaister: Medical Jurisprudence and Toxicology. 1915. Pp. 783.

A PSYCHOPATHIC HOSPITAL AT EDINBURGH.—Following upon the recommendation of the Board of Control for Scotland that it is time to set up "some form of psychopathic hospital" in Edinburgh, the managers of the Royal Hospital at Morningside have taken the matter in hand. They have spent £20,000 in fitting up the Jordanburn Hospital for this purpose and it will be ready to receive in-patients at about the end of the year; an out-patient department has also been designed. There will be room for about 50 patients.

HOSPITALS AND MOTORING ACCIDENTS.—In the first eight months of the present year the Royal Victoria Infirmary, Newcastle-upon-Tyne, dealt with 619 victims of motoring accidents, 295 of whom remained as in-patients, 100 more than in the corresponding period of 1925. The additional burden upon the resources of the hospital is at the rate of £4500 per annum. There are 1700 cases on the waiting-list, which has reached its present dimensions partly as the result of pressure upon beds caused by motoring accidents. Last year Leeds General Infirmary treated 768 such cases, 319 of which stayed for a total of 4740 days, at a cost exceeding £3000. During the last six months the average has worked out at about 1000 cases a year. The daily average of casualty cases of all kinds at Manchester Royal Infirmary is 75.

Reviews and Notices of Books.

RECENT ADVANCES IN MEDICAL AND ALLIED SCIENCES.

Recent Advances in Medicine. Third edition. By G. E. BEAUMONT, M.A., M.D., F.R.C.P., D.P.H., and E. C. DODDS, Ph.D., M.B., B.S., B.Sc. London: J. and A. Churchill. 1926. With 46 illustrations. Pp. 408. 12*s.* 6*d.*

ONLY two years have elapsed since we welcomed the first appearance of this useful book; already a second and third edition have followed in quick succession, and the authors have revised and rewritten several sections. Descriptions of the tests for pus and mucin in urine and of the method of estimation of the calcium-content of the blood have been added. The authors place no reliance on chemical tests for pus and insist on the necessity for microscopic examination of the centrifugalised deposit. The description of colorimetric methods of both blood and urinary analysis has been amplified, and fresh sections have been written on the sedimentation rate of red cells and size variations in anæmia. The account of H. MacLean's method of estimating sugar in blood has been made considerably clearer than it was in the first edition. The sections dealing with sugar metabolism are brought up to date by a new discussion on the action of insulin and of recent work on alimentary glycosuria. The necessity for constant estimations of the blood-sugar in diabetic patients laid a heavy burden on the general practitioner, as well as increasing the discomforts of the patient, and both alike will welcome the suggested method of treatment without blood examinations after the preliminary diagnostic one. The authors regard the method outlined by them as tolerably safe, provided the patient is acquainted with the preliminary symptoms of hypoglycæmia and can resort to sugar if they should appear. Large doses of insulin on an unmodified diet are deprecated, and, in accordance with accepted modern practice, the practitioner is urged to control the sugar output by diet as far as possible and then to prescribe the minimum dose of insulin necessary to keep the blood-sugar within normal limits. The analysis tables showing the caloric and protein, fat and carbohydrate values of different forms of food and the lists of graduated diets are succinct and clear, and the authors have laid the busy practitioner under a still greater debt of gratitude by setting out the graduated diets in the form of daily meals. A new chapter on the treatment and after-care of diabetics has been written for this edition. Chapter VI. contains an enlarged description of the various methods of gastric analysis and a critical estimate of the value of the fractional test-meal. The main utility of the fractional meal is in the investigation of the pyloric function, the examination of cases of achlorhydria, and the diagnosis of carcinoma. The authors point out that the old idea that there is a direct association of hyperchlorhydria with gastric ulceration is not supported by modern investigation. There is an excess of acid and the characteristic "climbing curve" in the fractional meal because there is pylorospasm, and the "climbing curve" is not given when the ulcer is remote from the pylorus. A good deal has been added to the chapter which deals with the liver. The galactose test is described and the account of the phenoltetrachlorphthalein test is enlarged. The van der Bergh test is dealt with fully.

Some beautiful radiograms illustrate the new section on the investigation of the gall-bladder by X rays, and the examination of the lungs after injection with lipiodol. The authors do not enter into the controversy surrounding the Schick test, but describe the reaction with precision. A chapter on the Dick test is included. Cutaneous protein tests, desensitisation, and the peptone treatment of asthma are discussed. The subject of protein shock is not mentioned; some remarks on the pathological basis and therapeutic value of non-specific irritants might well be included in the next edition, for although the bulk of the book is concerned with clinical methods of investigation, useful notes on practically all the latest lines of treatment have been included.

This book has in a short time achieved a signal popularity, which this edition should confirm and extend. Everyone needs to have reliable information on recent advances in medicine, and a combination of physician and biochemist as joint authors is an ideal one. The bibliographies at the end of each chapter are good indications of the latest original work and provide ample opportunity for the reader who wants to follow up any particular problem.

Recent Advances in Biochemistry. By JOHN PRYDE, B.Sc. St. And., M.Sc. Wales, Lecturer in Physiological Chemistry, Welsh National School of Medicine, University of Wales; formerly 1851 Exhibitioner in Chemistry. Same publishers. 1926. Pp. 348. 12*s.* 6*d.*

THE author of this book, as he states in the preface, has experienced great difficulty in selecting topics suitable for his purpose from the many branches of biochemistry. He has necessarily omitted many interesting and instructive aspects of the question, since under the heading biochemistry are now included chemical pathology and the chemistry of naturally occurring substances and their industrial aspect. Mr. Pryde has selected for notice the more purely chemical and physico-chemical aspects of substances of physiological importance, though in a book of this size he has obviously been unable to cover the whole field.

The book opens with an excellent chapter on protein catabolism; his description gives a clear idea of the deaminisation and oxidation of urea, which will be new to many, though the captious might complain that this work can hardly be termed "recent"; the references at the end of the chapter show that much of the work described dates from 1912, 1910, and even 1902. The second chapter is concerned with recent theories as regards the physical chemistry of the proteins, and supplies a readable account of the views of the late Prof. Loeb. The subject is a difficult one to explain in a few words, and Mr. Pryde deserves tribute for elucidating it. Chapter III. on the nucleo-proteins well summarises the more recent work of Walter Jones, Levene, and other workers. The references to this section are good, though for the benefit of the general reader some of the work on the synthesis of purines in the laboratory, notably Emil Fischer's researches, might have been included. The chapter on carbohydrates is perhaps the most valuable one in the whole book. The structure and biological utilisation of the different carbohydrates and their metabolism are admirably dealt with, and the accounts of some of the recent laboratory work on the constitution of these substances leave nothing to be desired. Succeeding chapters are devoted to the fats, phosphorus compounds, and sulphur. Into a brief space Mr. Pryde has compressed a detailed account of the occurrence of the various vitamins and of their importance, and an excellent series of references is included. The three final chapters on hæmoglobin, the chemical basis of specific immunological reactions, and chemotherapy are interesting as summaries of recent work, but give the impression that Mr. Pryde takes a more perfunctory interest in these studies and that the preparation of these chapters was less a labour of love than a duty.

As a whole this book will be found of the utmost value, not only to students who wish to have clear and accurate summaries of work which at the moment can only be found in special journals, but also to laboratory workers who may not have the time to study original papers in any other line of work than that on which they are engaged.

Recent Advances in Physiology. Second edition. By C. LOVATT EVANS, D.Sc. Lond., M.R.C.S., L.R.C.P., F.R.S., Jodrell Professor of Physiology, University College, London. Same publishers. 1926. Pp. 370. 12*s.* 6*d.*

THE changes of note in this excellent summary of the latest additions to physiological knowledge are few in number but of great significance. Thanks to the brilliant investigations of Dr. C. R. Harington at University College Hospital Medical School, the structure of thyroxin has been definitely determined, and the final compound all but completely synthesised. Of great practical importance is the same worker's new method for extracting the hormone from the crude thyroid tissue, a method which gives a yield of about 0·03 per cent. of the fresh gland. It will be remembered that Kendall was able to obtain a yield of only 0·001 per cent. by his method. The thirty-fold increase obtained by Dr. Harington will inevitably bring down the cost of extracting thyroxin, a cost which before was prohibitively large, to a level which will enable the drug to be produced on a commercial basis. Medical men should shortly be in a position to administer definite and known amounts of the active principle of the thyroid gland and no longer to be dependent on preparations, the dose of which, in the absence of an accurate method of assay, must be difficult to gauge.

A second important addition to this volume is the account of the mechanism of the action of insulin, which has now been brought to a satisfactory and comprehensible standpoint by the recent work carried out at the National Institute for Medical Research. By making use of the spinal eviscerated animal with constant infusion of glucose it has been shown that the administration of insulin causes an increase in the glycogen reserves and in the oxygen consumption of the preparation. Further, an accurate balance-sheet has been constructed between the amount of sugar disappearing from the blood on the one hand, and that partly deposited as glycogen and partly oxidised to CO_2 and H_2O on the other. The disappearance of glycogen from the muscles, which had been so repeatedly observed after large doses of insulin, has been shown to be due to the convulsions associated with the fall in blood-sugar. These convulsions, of course, do not occur in the spinal preparation. Further, insulin inhibits the transformation of protein and fat to carbohydrate, a transformation which we know to be abnormally great in cases of diabetes mellitus. An excess of insulin therefore causes the metabolism of the animal to swing entirely to the carbohydrate side, so that in the absence of a sufficiency of glycogen both the respiratory exchange and body temperature gradually fall.

We commend this fascinating volume whole heartedly to those students of biology and medicine who wish to obtain a scientific insight into some of the more important problems with which physiologists are grappling at the present time.

CHRONIC INTESTINAL STASIS.

A Radiological Study. Second edition. By ALFRED C. JORDAN, C.B.E., M.D. Camb., M.R.C.P. Lond., Corresponding Foreign Member, Belgian Royal Academy of Medicine. London: Humphrey Milford, Oxford University Press. 1926. Pp. 230. 21*s.*

THE first edition of this volume appeared in 1923, and the new edition contains no changes of outstanding importance. This book is of particular interest because many of the author's conclusions are not shared by the majority of his colleagues. The impartial reader is left with the impression that the whole argument of the book is designed to prove that intestinal stasis is a factor of far greater universal incidence and importance than most authorities believe, and, as was said in the review of the first edition, the author is safest when examining the intestinal viscera almost wholly from the point of view of the skilled radiologist. The pictures, many of which compare unfavourably with present-day standards, do not reinforce the argument; they are too often unconvincing. The chapter on the author's own apparatus should either have been left out or brought up to date, especially in regard to the interpretation of the "stasis" shown. For example, ileal stasis is present in practically every healthy patient who has any degree of constipation, and readily disappears when the bowels are cleared so that the food can pass on; therefore, since the author's rule is to allow no aperient to be taken for two days prior to the X ray examination, not much can be deduced from the examples of ileal stasis depicted. Dr. Jordan's book can be recommended as an able exposition of those extreme theories of the dangers of intestinal stasis which are held by a section of the medical public.

A MANUAL OF CLINICAL PROCEDURE.

By ROBERT A. KILDUFFE, A.B., A.M., M.D., Director of the Laboratories, the Atlantic City Hospital. London: Henry Kimpton. 1926. Pp. 287. 12*s.* 6*d.*

THE author states in his preface that he has set out to write a manual of laboratory practice suitable for the general practitioner, and he has succeeded admirably. He has kept a steady and unwavering eye upon his chosen audience—the family doctor who wants to push the diagnosis of his cases beyond the limits that can be achieved by the use of his five senses, even when one of them is aided by the stethoscope. The selection of matter is excellent and the procedures described could readily be performed with the minimum of equipment. The more elaborate methods of diagnosis, such as those involving fixation of complement and so forth, are omitted, though the indications for their performance and the interpretation of their results are fully discussed. An admirable little book.

THE PATHOGENESIS OF CHRONIC GASTRIC ULCER.

Die Pathogenese des Chronischen Magendarmgeschwürs. By Dr. J. R. F. RASSERS, Gastroenterologist at the Reichs-Universität, Leiden. Leiden: S. C. Van Doesburgh. 1926. Pp. 69.

THIS is an interesting monograph in which the author seeks to prove, by the experimental method, that gastric ulcers arise from a failure of the protective mechanism against self-digestion, due to lack of sodium ions in the gastric mucosa. He obtained ulcers in the stomach and duodenum by pouring acid pepsin solution daily into the stomachs of dogs, living on a diet deficient in sodium chloride. The book is well worth reading, though the relation of the findings to human gastric ulcer are not always brought out convincingly.

TUMOURS OF THE COLON AND RECTUM.

By JEROME M. LYNCH, M.D., Surgical Director, St. Bartholomew's Hospital, N.Y.; and JOSEPH FELSON, M.D., Attending Pathologist, St. Bartholomew's Hospital, N.Y. New York: Paul B. Hoeber. 1925. Pp. 259. $12.00.

THOUGH this is a very well-printed monograph, it is difficult to read. It consists of a compilation of the literature, a number of cases being interspersed, and lacks the personal note so valuable in contributions of this kind. The chapter on operative treatment is sketchy, but the authors claim "beautiful results in carcinomata of the rectum" by an interesting method, in which the growth is removed by the abdominal route, leaving a colostomy and the anal canal, continuity of the alimentary channel being restored 6–12 months later. On p. 168 there are important misprints on line 4, where "above" appears for "below," and line 11, where "prone" appears for "supine." The book is not likely to make a strong appeal to English readers.

STUDENTS' GUIDE—SESSION 1926–27.

DENTAL SURGERY.

(*Continued from p. 712.*)

TEACHING INSTITUTIONS IN DENTISTRY.

OF teaching institutions those connected with the several universities have now been described in some detail, but in addition to these there are a number of institutions which offer facilities to dental students and which are here set out under their localities.

LONDON.

Royal Dental Hospital of London, School of Dental Surgery, Leicester-square.—A school of the University of London. Women are now admitted as students and are eligible for all hospital appointments and school prizes. The school provides the special dental education required by the Royal College of Surgeons for the Licence in Dental Surgery. The general part of the curriculum may be taken at any general hospital. The hospital is open from 9 A.M. to 5 P.M., there being one staff for the morning and another for the afternoon of each day. Pupils are received for the training in dental mechanics recognised by the curriculum. The instructors at the commencement of each session give a course of lectures on Operative Dental Surgery. The five house surgeoncies are held for four months each and are open to all qualified students. The lecturers, in addition to their lectures, give special demonstrations on the Microscopy of Dental Anatomy and Dental Surgery. The lecturer on Dental Mechanics also gives practical demonstrations in the laboratory. There is an Entrance Scholarship in Chemistry and Physics of the value of £25. One Entrance Scholarship in Dental Mechanics and Metallurgy, value £25, open to pupils of the Hospital only. One Entrance Scholarship of £25 in Dental Mechanics, open to pupils of private practitioners. The Saunders Scholarship of £20 and Saunders Prize of £5 awarded to second year students. The Storer Bennett Research Scholarship for Scientific Research in any branch of Dental Surgery, value £50, is awarded triennially. The Alfred Woodhouse Scholarship of £35 and the Robert Woodhouse Prize of £10 for Practical Dental Surgery. The "Lonnon" Bursary of £25 for second year students. The "J. A. Smith" Scholarship of £50 for students in their first year's hospital practice. Prizes and certificates are awarded by the lecturers for the best examinations in the subjects of their respective courses at the end of the summer and winter sessions. Fee for two years' hospital practice required by the curriculum, including lectures, £70 in one payment, or £73 10*s.* in two yearly instalments. The curriculum requires two years to be passed at a General Hospital; the fee for this is about £52 10*s.* Both hospitals can be attended simultaneously. For the lectures in Chemistry and Physics for the Preliminary Science or Pre-Medical Examination £13 13*s.* The fee for the instruction in Dental Mechanics and the two years' hospital practice required by the curriculum is £200 if paid in one instalment, or 200 guineas if paid in three equal instalments. The fee for tuition in Dental Mechanics is £70 per annum; for one year's hospital practice £28.

University College Hospital Dental School, corner of Great Portland and Devonshire-streets, W.—This Hospital and School has recently been thoroughly reorganised, and is now fully equipped with all the most modern appliances. Students are entered as students of University College Hospital, and, as such, attend the classes of Anatomy and Physiology in University College, which is a few minutes' walk from the Dental Department in Great Portland-street, hitherto known as the National Dental Hospital, the first Dental School to admit Women Students. Practical courses to comply with the R.C.S. curriculum are held. Clinical Lectures and Demonstrations are given, and each student on entering passes through a preliminary course under a demonstrator. A calendar containing full information as to lectures, fees, prizes, &c., may be had on application to the Sub-Dean for Dental Students, who attends at University College Hospital Medical School, University street, W.C. 1, on Tuesday and Friday mornings at 10.30 o'clock.

Guy's Hospital.—The work of the Dental Department begins daily at 9 A.M. both in the extraction rooms and in the conservation room. The Extraction Rooms: There is ample accommodation for both general and local anæsthetic extractions, together with waiting- and retiring-rooms. Patients are admitted between 8.45 and 9.30 A.M., and are seen by the dental surgeon for the day, the staff demonstrators, the dental house surgeons, and the dressers. The Conservation Room is open from 9 A.M. till 5 P.M. It has a floor space of over 7000 square feet, and affords accommodation for about 100 dental chairs, with the necessary equipment of the most modern type for the use of the Dressers, who, under the supervision of the Staff, perform the various operations of Dental Surgery. There is a separate room for dentine patients affording accommodation for 15 chairs. The Members of the staff attend every morning and afternoon to give demonstrations and otherwise assist students in their work in the Conservation Room and Prosthetic Laboratory. The Probationers' Laboratory is supervised by three of the staff demonstrators, and instruction is given in operative dentistry on a "mannikin" to students during their first three months of clinical study. Students in Dental Prosthetics are received, and a graded, systematic, and full course of instruction, extending over two years, is carried out under the supervision of the Director of the Prosthetic Laboratory, assisted by two demonstrators and five mechanics. Dental students have the opportunity of attending at this hospital the whole course of instruction required by the examining board for the B.D.S. Lond. or L.D.S. Eng.—viz., the complete course in dental prosthetics, the special lectures and practice of the Dental Department, and the general lectures and practice of the Medical School. The fees for these two courses may be paid separately or together, or they may be combined with the fees required to be paid for the course for a medical diploma. Students who enter for a medical as well as a dental diploma are allowed to pursue their study of Dentistry during any period of their medical course most convenient to themselves without further charge. Two Entrance Scholarships are awarded in July of each year, a War Memorial Scholarship in Arts of the annual value of £40 for four years; and a Junior Science Scholarship of the value of £40 per annum for not more than four years. Prizes of the aggregate value of £40 are awarded for general proficiency and for skill in Operative Dentistry. The Newland-Pedley Gold Medal for Operative Dentistry is also awarded annually. Dental students enjoy the privileges of students in the Medical School. Application for studentship should be made to the Dean of the Medical School.

Appointments: All appointments are made according to the merits of the candidates, as determined by a committee of the Dental Staff. Eighteen house surgeons, 15 assistant house surgeons, and four student demonstrators of Dental Histology are appointed annually. The following appointments are held by students: Full surgeon's dresser, assistant surgeon's dresser, dresser in the children's department, casualty dresser, clerk to the anæsthetist, dresser in the gas extraction and local anæsthetic extraction rooms, and probationary dresser.

King's College Hospital.—The Dental School is part of the Medical School of King's College Hospital, and was opened in November, 1923. The Dental Out-patient Department of the Hospital is used for the performance of dental extractions. A large

Conservation Room with provision for 40 dental chairs has been equipped. Smaller rooms are used for clinical teaching and administrative requirements, and a specially equipped laboratory for training in the art of dental mechanics. An X ray apparatus has been installed for special use in dental skiagraphy. A museum containing a large number of specimens illustrating oral, buccal, dental, and other diseases is available for teaching purposes. The library, lecture theatre, lecture rooms, common rooms, and the refreshment room are all available for the use of students. Courses of study, including practical work, are provided for the degree of Bachelor of Dental Surgery of the University of London, and for the Diploma in Dental Surgery of the Royal College of Surgeons of England. Special arrangements are made for those students who wish to take a medical degree or qualification in addition to a degree or diploma in Dental Surgery. Full particulars of the Dental School may be obtained on application to the Dean, Dr. H. Willoughby Lyle, or to the Secretary, Mr. S. C. Ranner, M.A., King's College Hospital, Denmark Hill, London, S.E. 5.

London Hospital.—This school is a part of the London Hospital and Medical College, and is fully equipped on the most modern lines and with the latest appliances. It provides a complete curriculum in all subjects for the B.D.S. Degree and for the L.D.S. Diploma, and is admirably adapted for the purpose of teaching. The Conservation Room is well lighted and ventilated and fitted with pump chairs of the latest pattern; the fountain spittoons at many of the chairs have been specially designed. Each spittoon has attached to it a saliva ejector, hot and cold water, compressed air, gas and electric current, also a swing bracket to carry the students' cabinet. Electric sterilisers are supplied in each department and motor engines where required. The School possesses in addition to the Theatres, Laboratories and Museums in the College, a special Museum of Dental Anatomy and Surgery, Operative Dentistry, Prosthetic and Extraction Rooms, and Laboratories for Practical Metallurgy and Prosthesis. A systematic course of instruction is arranged for pupils. The up-to-date Laboratory contains every modern apparatus and is in charge of a skilled curator and his assistants. Connected with the Medical College and Dental School are a Library, Athenæum, Clubs' Union, Dining Hall with moderate tariff, Students' Hostel, and an Athletic Ground. For full particulars as to Scholarships and Prizes, fees and course of study advised, apply to the Dean, Prof. William Wright, who will be glad to make arrangements for anyone wishing to see the Dental School and Medical College.

London (Royal Free Hospital) School of Medicine for Women.—Full courses are arranged for women students, in conjunction with the Royal Dental Hospital, Leicester-square, for the study of dentistry, and in preparation for the B.D.S. Degree of the University of London and the Licence in Dental Surgery of the Royal College of Surgeons of England, at the London (Royal Free Hospital) School of Medicine for Women.

PROVINCIAL.

Birmingham Dental Hospital, Great Charles-street.—Dean: Cyril Howkins, C.B.E., D.S.O., M.R.C.S., L.D.S. The Dental Hospital was founded in 1858, and was recognised by the Royal College of Surgeons in 1880 for the teaching of Dental Students. Having an annual attendance of about 21,000 patients, it affords every advantage for students about to enter the profession to acquire a thorough practical knowledge, as required by the Medical Council. The present very fine building, which compares favourably with any similar institution, was opened on July 6th, 1905. It has accommodation for 100 students. The equipment is in accordance with the most modern requirements for the efficient teaching and practice of Dental Surgery, including Radiology and Ultra-Violet Ray Therapy and a new department for Practical Pathology and Bacteriology. The operations performed annually average 35,000, including gold and other fillings, crowns, bridges, porcelain inlays, and injections for block and infiltration anæsthesia. The orthodontic department is one of the foremost in the country. The Prosthetic and Mechanical Department is large and well lighted and under a highly skilled instructor who is always present. By arrangements with the Birmingham University and with the General and Queen's Hospitals the entire course of Lectures, Hospital Practice, &c., may be completed for an inclusive fee of £144 4*s.* 6*d.*, or including Mechanical Pupilage, £255 15*s.* 9d., inclusive of Examination fees for L.D.S. Birm. The instruments and materials necessary for Hospital Practice cost about £45. The Composition Fee for the courses required for the L.D.S. of the University, or any of the Corporations alone, is £75, payable in two annual instalments at the commencement of the first and second years; that for the courses required for the L.D.S. and the Degree in Dentistry of the University is £93 15*s.*; that for the L.D.S. in combination with the M.R.C.S. and L.R.C.P. is £115; and that for the M.B., Ch.B., and B.D.S. is £120. All of these composition fees are payable in two annual instalments at the commencement of the first and second years. Each of these fees covers the cost of the courses given at the University for the qualifications indicated, but does not include fees for Hospital teaching, nor Pre-Dental year Chemistry and Physics. For two years' dental hospital practice the fee is £26 5*s.*, payable in two instalments of £13 2*s.* 6*d.* each at the commencement of the first and second (hospital) years respectively. For two years' mechanical pupilage, £111 11*s.* 3*d.*, which may be paid in two annual instalments of £65 12*s.* 6*d.* and £45 18*s.* 9*d.* respectively; mechanical pupils may join for a probationary period of one month, fee £6 11*s.* 3*d.*, which is deducted upon payment of the full amount. For general surgical hospital practice, lectures, and demonstrations: Surgery, two winters, £13 2*s.* 6*d.* A Dental Scholarship is offered annually of the value of £37 10*s.* It is awarded to the student who, entering for the Dental Degree of the University, shall pass the best examination in the subjects studied during his apprenticeship. Application for admission must be sent to the Dean of the Medical Faculty, Birmingham University, or the Dean of the Dental Hospital, Birmingham.

Leeds University School of Dentistry.—The School of Dentistry is adequately equipped to provide for the complete training of the dental student. The School forms a part of the Leeds School of Medicine, whilst the instruction in clinical and mechanical dentistry is carried out in the Dental Hospital at the General Infirmary. The courses of study are mainly designed to meet the requirements of the B.Ch.D. and L.D.S. Leeds, but every opportunity is afforded to students preparing for the degrees or diplomas of other licensing bodies. Full-time demonstrators give the instruction in clinical dental surgery, prosthetic dentistry, and mechanics, which is carried out under the supervision and direction of members of the Honorary Staff, two of whom are in attendance each day. Special facilities are provided for instruction in Orthodontia, Dental Radiography, Local and General Anæsthetics. Prizes are offered for competition to pupils and students in their respective years of study. Communications should be addressed to the Warden, School of Dentistry, Leeds, from whom a prospectus may be obtained.

Dental Hospital of Manchester.—This hospital is in association for teaching purposes with the University of Manchester and the Royal Infirmary, and is in the centre of a very large population. Courses of study are provided to meet the requirements of the various examining bodies, including those of the University of Manchester for the qualifications L.D.S. and B.D.S., and the L.D.S. of the Royal College of

Surgeons of England. Clinical instruction is given in Dental Prosthetics, Operative Dentistry, Diagnosis and Extraction, Orthodontics, Dental Surgery, Radiography, and Anæsthetics by specially appointed Clinical Teachers.

For the whole course of hospital instruction for the L.D.S. (including two years' mechanical training) the fee is £131 5*s*., paid in instalments. For the two years' Operative Course only, £26 5*s*., paid in two instalments. For the whole course of hospital instruction for the B.D.S. degree (including mechanical training), £168, paid in instalments. In accordance with the new regulations, L.D.S. students who have taken two years' training in practical Dental Mechanics with a registered practitioner are required to take a further year in the Hospital mechanical laboratory, the fee for this being £63. All the courses of instruction are open to women students. Copies of the Prospectus will be forwarded on application to Mr. J. Hilditch Mathews, Dean.

Newcastle-upon-Tyne Dental Hospital and School.—This hospital is centrally situated (within five minutes of the various colleges, infirmary, and railway station); the rooms are well lighted and thoroughly equipped for carrying on the work. Dental surgeons and an anæsthetist attend each morning. A tutorial dental surgeon and a prosthetic tutor is also in attendance. The Composition Fee for the special Dental Lectures and Dental Hospital Practice is £60 4*s*. if paid in one sum, or £62 6*s*. if paid in two instalments of £31 3*s*. The Composition Fee for the Lectures at the Colleges of Medicine and Science is £67 10*s*.; in addition to this there is a library and an athletic club fee. The fee for General Hospital Practice at the Royal Victoria Infirmary, Newcastle-upon-Tyne, is £23 2*s*. Medals and Certificates of Merit are granted to students showing certain standards of proficiency in the various classes at the Dental School. The prospectus of the Dental Hospital and School, containing full information, may be obtained from Mr. James Coltman, 13, Ellison-place, Newcastle-upon-Tyne, Dean.

Devon and Exeter Dental Hospital, 24, Southernhay West, Exeter.—Established 1880.—The hospital is open on Mondays, Tuesdays, Wednesdays, Thursdays, Fridays, and Saturdays, and patients are admitted between the hours of 9.30 and 11 A.M. Students attend the practice of the hospital under the control of the medical officers. Honorary treasurer, Mr. J. M. Ackland; secretary, Mr. Albert G. Littlejohn.

SCOTLAND.

The Incorporated Edinburgh Dental Hospital and School.—The Edinburgh Dental Hospital and School is located in spacious and well-equipped buildings at 30, 31, and 32, Chambers-street, and offers special advantages to dental students. A large and important extension of the existing buildings is now in process of construction. The General Courses required for the Dental Diploma may be taken in the Medical School of the Royal Colleges of Physicians and Surgeons or in the University schools. The general hospital attendance and clinical instruction are taken at the Royal Infirmary. The University, Medical Schools, and Royal Infirmary are within three minutes' walk of the Dental Hospital. The special courses are taken in the hospital. The Dental Hospital practice, extending over two years, affords a student ample opportunity for a full acquaintance with every branch of dentistry. The hospital admits a limited number of indentured pupils. They receive their instruction in Mechanical Dentistry concurrently with the general and special courses. A premium of 60 guineas is payable with each such pupil. The practice and lectures of the hospital are recognised by, and qualify for, all the Licensing Boards. The cost of the hospital outfit of instruments is included in the Dental Hospital fee of £42. The minimum cost of classes and Diploma for the whole course of dental instruction amounts to £123. Those students who desire to take a Medical and Surgical Diploma in addition to the L.D.S. have in this school admirable facilities for so doing. The triple qualification of the Royal College of Physicians and Surgeons of Edinburgh and the Royal Faculty of Physicians and Surgeons of Glasgow is recommended. The minimum cost of Professional Education, the Triple Qualification, and the Licence in Dental Surgery amounts to £202 8*s*. 6*d*. The Higher Dental Diploma (H.D.D.) of the Royal College of Surgeons affords an opportunity of obtaining a higher qualification subsequent to registration. The Prospectus, with full information, may be obtained by application to the Dean or the Assistant Secretary.

Incorporated Glasgow Dental Hospital, 158, Renfrew-street and 15, Dalhousie-street, Glasgow.—The School is open to Men and Women Students, and Lectures are given on Dental Surgery, Operative Dental Surgery, Orthodontia, Dental Anatomy and Physiology, Dental Histology, Dental Mechanics, Crown and Bridge work, Dental Metallurgy, Dental Bacteriology, Radiology, Anæsthetics, and Dental Materia Medica. Lectures on general subjects required for Dentistry may be taken at the University or at one of the extra-mural schools where special provision is made for Dental Students. Composition fee for two years' Hospital Practice and Lectures special to Dentistry, £60 on entry, or in two instalments of £35 and £30. A new mechanical laboratory with bench accommodation for 60 pupils and fully equipped with the most modern appliances for teaching practical dental mechanics has recently been added. Fee for two years' tuition, £63, or in two instalments. Full information may be had on application to the Dean.

Glasgow Royal Infirmary (Dental Department).—Mr. W. R. Taylor attends at the Royal Infirmary at 9 A.M. on Wednesdays and other days as arranged. The following course in the curriculum can be taken at St. Mungo's College: Anatomy, six months; Practical Anatomy, nine months; Physiology, six months; Chemistry, six months; Practical Chemistry, three months; Surgery, six months; Medicine, six months; Materia Medica, three months; Clinical Surgery, six months; Dental Surgery, six months, and attendance for two years on the dental department of the hospital.

IRELAND.

Incorporated Dental Hospital of Ireland, Lincoln-place, Dublin.—All Dental Students who have passed their First Dental Examination in the Royal College of Surgeons in Ireland (or an equivalent examination or examinations) are admissible to the Clinical Instruction of the Hospital. In addition to Clinical Instruction and Special Demonstrations, courses of lectures are given at the hospital on Dental Surgery and Pathology, Mechanical Dentistry, the Administration of Anæsthetics, Orthodontia, Dental Anatomy, and Dental Materia Medica, and instruction in Anæsthetics. Fees: Hospital Practice (each year), £18 18*s*.; Lectures, £5 5*s*. The course in practical Dental Mechanics can be taken in the Hospital Laboratory. Further particulars can be obtained from the Dean.

CIGARETTE CARDS FOR HOSPITALS.—Mr. George Giddings, of Coldharbour-lane, Camberwell, who has been paralysed since childhood, has collected cigarette cards to the number, he estimates, of millions. He began doing so as a hobby, but eventually let it be known that he was prepared to amass and sell cards to complete collections, the proceeds to go the Red Cross during the war. Since 1919 he has continued the work on behalf of King's College Hospital, where he supports a cot. Altogether he has contributed nearly £1000 to the Red Cross and the hospital. None of the cards are bought; they are all sent to Mr. Giddings by people who have heard of what he is doing, and he receives them in such large numbers that he is always able to complete imperfect collections.

THE LANCET.

LONDON: SATURDAY, OCTOBER 9, 1926.

THE MEDICAL LIFE.

MANY aspects of the medical life were presented by professional leaders last week to the students assembled at the various teaching schools for the opening of the winter session, and those which we publish to-day in abridgment may all be said to deliver the common message that the medical life is a full and fine one, calling for the exercise of high practical as well as scientific qualities, and affording opportunities for the exercise of these qualities in many varied forms. For the students at King's College Hospital this last point was made the subject of the introductory address, in which Sir HUMPHRY ROLLESTON reviewed the various careers of practitioners, contrasting their financial rewards with those which were obtained, for example, by barristers, and indicating once again the obvious fact that the general practitioner is, and must be, the backbone of the profession. Wisely he commenced his address with a warning against too early specialisation as he set before his audience a picture of the diverse careers that entry of the medical ranks offers, while he outlined the direction in which development and evolution were occurring.

A survey of the medical profession at once reveals the varied opportunities that the medical life holds out to men of different bents of mind. The general practitioner, the consulting physician, the operating surgeon, the holder of purely scientific appointments, the officer in Government and municipal employ, the medical manager of institutions, the medical officer in the Services, lead careers which differ entirely, though the reason for their working lives—the prevention and remedy of disease—is common to all. For some life will be essentially adventurous; for others it will be spent in two or three wards, an operating theatre, and a consulting-room. Some will be the trusted friends of the great; socially, many exclusive doors will be open to them and intercourse with intellectual leaders of all sorts will be their right: others will serve under authorities and municipalities composed of men whose education and position may not be equal to their own, even while the wide extension of public culture is allowed for; and some will live in daily and intimate intercourse with the poor. The man who loves the study of his fellows has social and psychological problems unrolled before him from hour to hour—he sees naked souls as well as naked bodies, and has to take the treatment of both into his consideration. No special application of psychological knowledge can alter the position that the sound doctor must be to a great extent, and always, a sound psychologist; and every general practitioner knows this so well that he seldom alludes to its obviousness. He whose sympathies are rather with the theory than with the practice of his art can exert his energies in the class-room or laboratory without coming into collision with the public. The sportsman can indulge his proclivities in moderation whilst discharging his professional duties with zeal, though small will be his chances of success if the zeal is manifested too much over the sport and the moderation is applied to his appetite for his duties. All sorts of persons in all sorts of methods and under all sorts of skies can carry on the profession of medicine, so that there need not be many to whom the medical life is irksome, though there must be few for whom it is not arduous. There will be an unfortunate minority, who, being by Nature designed for work of one kind, have by stress of circumstances been forced into a different groove. Probably they did not discover their own tastes until it was too late to work in the necessary direction, and this error is a very difficult one to rectify, whatever calling a man may adopt. But, speaking generally, the profession of medicine has this first advantage for its British disciples—an advantage which members of other nations do not enjoy—it offers a career that can be varied to suit all inclinations. Further, a high percentage of the followers of medicine attain to a fair degree of success, and the total failures are comparatively infrequent. These things must always be remembered, for while certain circumstances may be held to detract from the medical life—the tyranny of many of its conditions, for example, and the strain of many of its conjunctures—they establish it as a good life, offering chances to a man with brains and energies, a large choice in the sphere of labour, and to a fitting extent an opening for individuality, even while obeying the restrictions entailed by the world.

That the medical life, despite its common objective remaining ever the same, will be changing perpetually as knowledge of medicine progresses, was the message of Sir ARCHIBALD GARROD to the students at Westminster Hospital. He pointed out that with the development of clinical medicine, which has been so striking a feature throughout the last 50 years, there has come for the doctor of to-day numerous alternatives in professional life which did not exist for his immediate forerunners. The student of 50 years ago had to regard his studies as leading up to one of three or four methods of making a livelihood. Pathology was synonymous with morbid anatomy, and of those scientific developments in medicine, which are the pride of our time, the foundations were only being laid, largely by medical men in the intervals of practice. There were no bacteriologists and the whole of the biochemist's story remained to be told. But the vitality of medicine is here illustrated excellently by the fact that, as the separate branches of the medical life have become more differentiated, intensive study along the various lines continues to reveal gaps in our knowledge previously undetected, affording boundless opportunities for research. Here the words of Sir WALTER FLETCHER at the opening of the session of the London School of Medicine for Women are exactly apposite. "It is not very bold," he said, "to think that the physician is likely to find his powers and scope changing rapidly in many ways as we lay hold of the elements of a scientific knowledge of nutrition and begin to use its enormous latent powers." Everyone who tries to keep abreast with the literature of our calling will have noted the increasing authority with which it is possible to speak on the manifold problems of nutrition, and will also have noted the many places where theories require confirmation and statements ask for support, both of which will have to come from the men and women who are doing the clinical work. "The practical doctor has greater opportunities to carry on investigations bearing directly on the treatment of disease than the laboratory worker," said Prof. THOMAS YEATES to the Middlesex Hospital students, and this an inspiring thought for all, gains force from the high position of clinical teaching in this country,

Dr. GRAHAM LITTLE, in his address to the students at St. George's Hospital, the provocative nature of which he has since admitted to have been intentional, mentioned the insistence which has been laid always in British schools upon the importance of clinical training. Our men are thus fitted, while discharging the duties of practice, to collect and collate those clinical facts upon which science depends in its march, and at any occasion where medical training is the subject of oratory or debate, it is well that this gratifying fact should be insisted upon. The high clinical level of the general body is the guarantee that our medicine is sound and moving forward.

WELFARE OF THE BLIND.

THE sixth report of the Advisory Committee on the Welfare of the Blind to the Ministry of Health [1] records the advances of the last two years. As many as 90 per cent. of the blind population over 50 years of age are now receiving the old-age pension, the remaining 10 per cent. being presumably in the possession of other means. The expenditure of local authorities in connexion with the Blind Persons Act has risen from £14,671 in 1921–22 to £127,593 in 1925–26, and it is satisfactory to know that in spite of this the income of voluntary agencies from subscriptions and donations has risen to over £400,000 in 1923–24. These sums are supplemented by grants from the Ministry of Health to an amount which now exceeds £100,000, the greater part of which money consists in grants made for employment purposes to workshops and home workers, but a substantial part of which goes to the provision of "home teaching" to blind persons classed as "unemployable."

The total number of the blind population of England and Wales in 1925 was said to be 42,140, but we think that in one respect the statistics are incomplete. The table showing the distribution of blindness according to age-periods shows 0·6 per cent. under 5 years old, whereas in the table showing the ages at which blindness was acquired it appears that about one-fifth became blind within the first year of life (a fact due partly to congenital blindness and partly to ophthalmia neonatorum). Is it that a considerable proportion of children under school age escape registration? On the other hand, the dividing line between "blind" and "not blind" is not easy to draw, and a recent circular of the Ministry of Health draws attention to the varying standards which have been adopted. The definition "too blind to perform work for which eyesight is essential," which is found in the Ministry's regulations is obviously quite vague for the purposes of statistics. Out of a total of 39,163 blind persons over the age of 16, only 8840 were actually employed, but it is satisfactory to find that the number under training increased between 1923 and 1925 from 1246 to 1621. Of the 26,826 blind classed as "unemployable" a few have private means, and some are married women occupied with domestic duties, but the great bulk, the report states, are definitely incapable of performing any work of an economic worth. For their benefit each local authority in consultation with voluntary agencies, and with the sanction of the Ministry of Health, has drawn up schemes of assistance, both social and financial, the income being generally made up to 25*s*. a week or higher. In the case of the employed blind the earnings are generally supplemented on a sliding scale, and with a view to the promotion of a greater degree of uniformity a definite scale of augmentation is recommended by the Ministry as a general national minimum.

The report contains some reference to partially blind children for whom the total accommodation at present available in myope schools and myope classes is sadly deficient. We would call special attention to the warning "that any restriction at the present time in the development of sight conservation classes would be a very regrettable, and in the long run, an uneconomical measure." The hope is expressed "that it will be possible for the Board to proceed with their full programme for the development of extended facilities for the education of this class." More consideration is needed to help parents in a choice of career for their children with weak sight, whether due to myopia or to some other cause, and the case of that considerable class of adults who become weak-sighted in later life without being so blind as to qualify for State assistance might well be commended to voluntary effort.

[1] H.M. Stationery Office. Pp. 32. 9*d*.

IRRADIATION AND CELL-DIVISION.

THE therapeutic value of X rays and radium is based on the fact that certain tissues, of which cancerous tissue is one, are more sensitive than others to the destructive action of these radiations. Of normal tissues the lymphoid tissue and the testis are particularly sensitive to irradiation, and this selective action goes even so far as to distinguish between different cells of the testis; the cells of Sertoli are much more resistant to radiation than the cells engaged in spermatogenesis, and the interstitial cells may even hypertrophy when the seminiferous tubules atrophy after irradiation. Since all the tissues which are specially sensitive to irradiation are growing tissues in which active cell-division is going on, it has been assumed in explanation of the selective action of irradiation that cells in the process of mitosis are particularly sensitive. This view is expressed in what is called the law of Bergonié and Tribondeau, which may be formulated as follows: "Immature cells and cells in an active state of division are more sensitive to irradiation than are cells which have already acquired their fixed adult morphological or physiological character."

Several recent publications throw doubt on the correctness of this explanation. STRANGEWAYS and his collaborators [1] have studied the effect of exposure to X rays on cells cultivated in vitro, using choroid cells of the embryo chick as the test object. They found a distinct diminution in the number of cells in mitosis if the irradiated cultures were examined after having been incubated for 80 minutes after exposure. This effect was obtained even with very small doses of X rays, so that the authors are inclined to look upon it as a particularly delicate test of biological response to irradiation. No stimulating effect was obtained even with the smallest doses. With increasing dosage the effect became more and more marked, so that with the largest dose given there was a complete cessation of mitosis. By direct observation under the microscope on the warm stage the surprising result was obtained that the cells which were already in some stage of mitosis—even the earliest prophase—before irradiation began, passed through the remaining phases of cell-division and gave rise to two daughter cells. The inhibition of cell-division is therefore not due to injury or disintegration of cells

[1] T. S. P. Strangeways and H. E. M. Oakeley: Proc. Roy. Soc. B., 1923, xcv., 373. Strangeways and F. L. Hopwood: Ibid., 1926, c., 283.

actually passing through the process of mitosis. It must therefore be due to an inhibitory effect on the resting (i.e., non-dividing) cells whereby these are prevented from entering into the process of mitosis. From this inhibition the cells can recover if only small doses of X rays have been applied. The cells begin to divide again normally after five hours and the irradiated in vitro culture can be successfully subcultured an indefinite number of times. With larger doses, however, the mitoses which appear are abnormal and the cells disintegrate. STRANGEWAYS and HOPWOOD state categorically that "cells undergoing mitosis are unaffected by X radiation," apparently basing their statement on the observation that exposure of dividing cells to doses so large as to produce permanent damage if applied to non-dividing cells does not prevent dividing cells from completing mitosis and giving rise to two daughter cells. But the possibility remains that the subsequent history of the daughter cells may afford evidence of some permanent injury, and the paper does not contain any observations which would exclude this. It would certainly be remarkable if the process of mitosis should render an otherwise sensitive cell completely resistant to irradiation.

Strikingly similar results have been obtained by J. C. MOTTRAM, G. M. SCOTT, and S. RUSS[2] from a study of the effect of beta rays from radium upon the cells of a transplantable rat sarcoma. After radium had been applied over the tumour a piece of it was removed and the number of mitoses in a radiated and a non-radiated tumour compared by means of stained sections. An hour after exposure an almost complete absence of mitosis was noted in the irradiated tumour, although at the time of exposure numerous cells could be seen in mitosis. After a period varying with the size of the dose there was a return of cells showing mitosis, even when doses had been given so large that, applied to the tumour in vitro, the cells on transplantation would have been unable to produce a new tumour. They explain these curiously paradoxical phenomena in the light of STRANGEWAY'S work as being due to an inhibition of the cells from entering into the phase of mitosis, the process of mitosis itself being unaffected by irradiation. These observations raise a number of interesting problems. It is obvious that we must discard the old explanation which attributes the special sensitiveness to irradiation of growing tissues to the presence of cells in the phase of mitosis. Although cytologically the resting cells of a growing tissue are not different from the cells of a non-growing tissue, these observations show that they differ biologically in their sensitiveness to irradiation. Such sensitiveness must be due to some property which the cells of all growing tissues have in common and which is presumably connected with the process of growth. Since this applies to normal growing cells as well as to cancer cells, it would appear that the mechanism of growth is essentially the same in both.

[2] Proc. Roy. Soc. B., 1926, c., 326.

ST. LUKE'S DAY.—There will be a special service at St. Martin's Church, Trafalgar-square, W.C., on the evening of Monday, Oct. 18th. To this service, which commences at 7.45 P.M., all members of the medical and nursing professions will be welcome. The service will take the form of thanksgiving for health and a prayer for the sick and suffering, and the preacher will be Dr. Arthur Lankester. Dr. Lankester went out to India in 1891 and was stationed at the Church Missionary Society's Hospital at Amritsar. Subsequently he took charge of the hospital at Peshawar, N.W. Frontier. He has been decorated for public services in India and his research work in connexion with tuberculosis.

Annotations.

"Ne quid nimis."

COAL AND HOSPITALS.

THE long continuance of the coal strike and the rapid approach of the time when the sun can no longer be depended upon to warm wards and offices is causing serious anxiety to the authorities of most of the hospitals in the country. For two or three days in the early part of last week there was a foretaste of what cold weather means to patients and staff when fuel is scarce and the warming of great spaces is inefficient or impossible. In a private house where everyone is in normal health cold rooms for a day or two may be no more than a very annoying inconvenience, but in a hospital cold wards, besides adding to the difficulties of staff work of all kinds, may be a real danger to patients. So long as coal can be found to run railway services, which are but little curtailed, it is impossible to find any excuse for starving the hospitals, more especially since the production of English coal increases daily. Yet the danger of this deprivation unquestionably exists. At the best stocks of fuel are low and much of that which is obtained currently from abroad is of small calorific value, and consequently even more expensive than its inflated price attests. Many hospitals, in fact, have no stocks at all, and some are experiencing difficulty in obtaining week-to-week supplies. The Royal Infirmary at Edinburgh, for instance, which has close upon 1000 beds, finds that the foreign coal which it has been using is no longer obtainable and the supplies in hand will last little more than three weeks. Failing replenishment of the cellars it may be necessary to close wards, but an official warning to this effect has already produced some handsome offers. This may be an extreme case, since the principal hospitals of Cardiff, Manchester, and Birmingham have none of them had any real difficulty in getting coal, though it has been more expensive and in some cases of poor quality. But the general outlook is not reassuring. In London, so far, difficulties have been surmounted with fair success, and it is satisfactory to know that at the London Hospital, the largest of the metropolitan institutions, the position is much less alarming than would appear from erroneous statements in daily newspapers. Its demands are necessarily large—150 tons of fuel are required every week of which 130 are consumed by central heating—but supplies are coming in freely, the central controlling authorities having given all possible help. At St. Bartholomew's a long stoppage was anticipated and careful preparations were early made to meet the difficulties that were foreseen. Much larger stocks were laid in than is usual at that period of the year, but they are now rapidly diminishing, and a few days of really cold weather would deplete them very seriously. The existing supplies, consisting largely of foreign coal, may last for five or six weeks, but the governors are anxiously considering methods of replenishment against the days, now not far distant, when the full winter consumption will have to be provided for. Guy's Hospital generates its own electricity, and its fuel requirements are consequently large. It has no stocks to fall back upon, but current supplies have, so far, been sufficient for all purposes. Middlesex Hospital is fortunate enough to have fairly large stocks still in hand, and is able to keep its central heating system fully at work. There is consequently little cause for anxiety so long as the mild weather continues. St. George's, on the other hand, has no reserves and only foreign coal can be obtained. Both house and steam coal are costing 77*s.* per ton, and between £120 and £130 a week beyond the normal is being spent on fuel. Stocks at King's College Hospital have run very low, but what may be called domestic supplies are still being received in sufficient quantity. The most serious difficulty arises in relation to the central heating and

electric services for which fuel can no longer be obtained in adequate quantity. This hospital also generates its own electricity for all purposes, including the very important ones of massage and X ray work. The activities of these departments are consequently threatened, though they have so far not actually been interfered with. Owing to inadequate heating during the cold snap of the early part of last week, the children's wards were so much cooled that all the cots had to be placed as near as possible to open fires. Westminster Hospital's stocks were exhausted a short time ago, and it is now dependent upon its weekly allowance. That allowance has not been reduced so far as the hospital itself is concerned, but the medical school and the nurses' home are severely restricted. St. Thomas's, which uses oil fuel, is unaffected. Charing Cross burns coke only for its central heating, and is just able to manage, though full supplies are unattainable.

The troubles of the hospitals in consequence of the strike are obviously not confined to the difficulty of obtaining fuel. There are serious economic results also. Not only are coal and coke at more than famine prices, but such services as gas, electricity, and water are costing or soon will cost more. This means a heavy increase in current expenditure in directions where it is hardly possible to economise appreciably. Moreover, in many cases income has fallen heavily, especially in places where contributory schemes are in operation. Cessation of wages implies cessation of the workman's 1*d.* in the £, and his employer's supplementary payment. The voluntary hospitals are thus more than ever dependent upon the general prosperity of the country. Money will no doubt be found somehow to pay for fuel, the cost of which is not only excessive but is suspected of being unjustifiable. But the difficulty of obtaining heating material may yet be greater than that of raising money, hard as that is. Clearly the matter cannot be left at hazard. Power and light are among the first essentials for the continuance of hospital work, and precautions must be taken against that work being interfered with whilst fuel is available for less important services.

MEASUREMENT OF MOVEMENT IN JOINTS.

IT has been said with some truth that science is measurement, and if surgery aspires to rise above the status of handicraft implied by the etymology of its name it must resort to the use of instruments of precision. The necessity for this has been felt by a number of surgeons, and there is no lack of elaborately constructed instruments for the exact measurement of the deformities with which the human body may be afflicted. Unfortunately the data, the fixed points from which measurements are made, are in general ill-defined. If it is difficult in the bare skeleton to mark out the exact axis of one of the long bones, it is still more difficult to do so in the living body, when the observer is separated from his data by often voluminous soft parts. For these reasons it has seemed to us that elaborate and delicate instruments are unnecessary, for measurements can only be approximate and there must be a wide margin of error allowed. Prof. A. P. Ashhurst, of Philadelphia, has recently published a paper [1] on the Motions of the Larger Joints, which is not, as might be supposed, a dissertation on the mechanism and action of joints, but on a less ambitious scale it is an attempt to lay down some rules for the measurement of the range of motion in these joints in health and disease. Although he does not describe his apparatus, we are able to gather from the illustrations and the text that Prof. Ashhurst employs generally a simple goniometer. The carpenter's 2-foot rule with angle-plate, which is sold by all tool-dealers, is the simplest form of this, and has been found quite accurate enough by some surgeons in this country. The only other instrument mentioned in the article is a "pronometer." This has nothing to do with pronouns and grammar, but appears to be an instrument intended to register the rotary movement of the forearm, including, of course, supination as well as pronation. As there is no description of this machine and the illustrations do not show its construction, the reader is unable to judge of its efficacy a priori or to test it for himself. Measurements of the angle formed between two long bones, such as the femur and the tibia when the knee is bent, is comparatively easy, but when we come to deal with a joint of which one component is an irregularly shaped mass such as the os innominatum or the shoulder-blade, the difficulty of defining the axis of either of the latter is very great. Prof. Ashhurst makes no attempt at instrumental mensuration in these two cases, but relies upon a rough estimate by the eye alone, after pointing out the fallacies which should be avoided. As far as it goes this article may be useful, for it is a good thing to reiterate truths and illustrate them by clear diagrammatic drawings, although they may be commonplaces to orthopædic surgeons.

[1] International Clinics, 1926. Thirty-sixth series. Vol. I., p. 74. London: J. B. Lippincott Company. Price per four volumes, 50*s.*

THE ACTION OF EMETINE IN AMŒBIC DYSENTERY.

SINCE W. C. Boeck and J. Drbohlav [1] showed that it is comparatively easy to cultivate *Entamœba histolytica* in test-tubes, the scope of clinical and epidemiological investigation of amœbiasis has been much enlarged and the experimental situation has completely changed. J. H. St. John [2] has recently shown the value of cultural methods in the diagnosis of doubtful cases and other workers have thrown new light on the incidence of amœbiasis in man. It has often been observed that in temperate zones there are large numbers of carriers of *E. histolytica* who have no symptoms, and it is said that there are nearly 2 million cyst-passers in England; yet only one or two autochthonous cases of amœbic dysentery are reported each year, and the question is often asked why the entamœba should cause dysentery amongst infested persons in the tropics but not amongst those in temperate zones. E. Brumpt [3] has used cultural methods to investigate a new species, *Entamœba dispar*, described by him in 1925, and suggests that the widespread four-nucleated-cyst amœba is wrongly regarded as *histolytica*. It should, he thinks, be classified as *E. dispar*, and is perhaps not pathogenic at all.

Whilst morphological investigations are of interest, the value of cultural methods is equally apparent when it comes to testing the value of amœbicidal drugs. It is accepted that emetine is a specific therapeutic agent in amœbic dysentery, and clinically it is found that emetine and cephaeline are the only alkaloids of ipecacuanha which have curative properties in this disease. Experiments on their action in vitro, however, have by no means borne out this clinical fact, and to explain the discrepancy it has been suggested that emetine does not act directly on the parasites and that the host plays a large part in the cure. In an important paper published recently C. Dobell and P. P. Laidlaw [4] attribute the divergence of results to the inherent error of comparing in vitro experiments, lasting only a few hours, with a therapeutic action spread over many days. They have now studied the action of ipecacuanha alkaloids on *E. histolytica* in culture and were able to improve on the original method of Boeck and Drbohlav and to get rich cultures of amœbæ, growing with great regularity. They could thus expose the amœbæ to various concentrations of ipecacuanha alkaloids for as long as was desired, at the same time being sure that their control cultures, without alkaloid, would multiply throughout the

[1] American Journal of Hygiene, 1925, cclxxi.
[2] Journal of American Medical Association, 1926, lxxxvi., No. 17.
[3] Bulletin Médical, 1926, xl., No. 5.
[4] Parasitology, June, 1926.

course of the experiments. Culture tubes inoculated with the amœba were incubated at 37° C. for two to three days, and results at the end of 48 hours were usually decisive. Earlier examinations gave misleading results. The experiments made it clear that 1/50,000 is the highest concentration of emetine that *E. histolytica* will tolerate for more than a short time. The amœbæ might live and move actively for many hours in 1/1000 concentration of emetine, but they did not multiply and the cultures soon died out. In 1/200,000 they grew well and multiplied as actively as in the control tubes. The threshold value of emetine was therefore 1/50,000 dilution. Cephaeline was found to be definitely more toxic than emetine for *E. histolytica*, but the other ipecacuanha alkaloids and derivatives, in concentrations lower than 1/1000, invariably gave cultures as rich as the controls. Quinine, tested by this new technique, in concentration lower than 1/1000, also gave cultures of *histolytica* as rich as in the controls. Stovarsol was found to be without effect in dilution of 1/20,000 or less, but had a slow poisonous action in stronger solutions; emetine, under these experimental conditions, is thus shown to be ten times more toxic than stovarsol for this amœba. Similar culture-test comparisons showed that, in vitro, emetine and cephaeline were 50 times more toxic to *E. histolytica* than were any of the other ipecacuanha alkaloids. There thus appears to be a close parallel between the actions of the various ipecacuanha alkaloids on cultures of *E. histolytica* in vitro and their several therapeutic effects in human infections with that amœba. Dobell and Laidlaw consider that their experiments show that doses of emetine and other alkaloids needed to kill *E. histolytica* immediately bear no apparent relation to the minimal doses of the same substances which are eventually lethal if maintained for a period of days. Exactly how weak solutions of emetine act on *E. histolytica* is hard to determine. The poisoning process—whatever it be—is slow, the alkaloid operating and producing its ultimate effect in a concentration far below that required to kill the parasites immediately. A very small amount of emetine, if constantly present in the intestine for days or weeks, would probably suffice to make life therein impossible for *E. histolytica*, though not for *E. coli*. Some human beings infected with *histolytica* appear to be incurable by emetine, however administered, and to explain this the existence of emetine-resistant strains of the parasite has been postulated. Dobell and Laidlaw, however, found it impossible experimentally to obtain or produce a strain of *histolytica* resistant to emetine, and suggest that these cases may be incurable because, like the cat, these individuals excrete the drug rapidly in the urine, so that little or none of it reaches the colon. Comparative analyses of urine in different cases would settle the matter. They conclude finally that the curative effects of emetine in human amœbic dysentery are best explained as a result of the direct lethal action of the alkaloid on *E. histolytica*.

The authors are to be congratulated on a valuable investigation. Their results have a wide application, for, as with amœbæ so with trypanosomes and spirochætes, it is clearly not sufficient to expose parasites to a given drug for a few minutes or a few hours, or to ascertain what concentration of the drug is instantaneously fatal. Before the possibility of direct action can be excluded, the effects of prolonged exposure to concentrations which do not kill immediately must be determined. The clinician will note, however, that these are conclusions based mainly on results of in vitro experiments and that a highly organic medium (horse serum and egg-white) was in fact incubated with the drug tested. He will think of the apparently magic—because very rapid—result of one or two gr. i. injections of emetine in severe cases of amœbic dysentery, and question if in so short a time and with so few doses a concentration of emetine greater than 1/50,000 has appeared in the colon. If no higher concentration is reached, then the direct action of emetine on the parasites in the intestine must be far more rapid than in the experimenter's test-tube.

Many interesting papers on amœbiasis, including some of those to which we have referred, are well summarised in the current *Tropical Diseases Bulletin* (September, 1926).

BATHING AND AURAL DISEASE.

THE bathing season just over has produced the usual crop of trouble in the ears of bathers; and it may be useful to examine briefly the causation and possible prevention of aural diseases due to bathing while their occurrence is still fresh in the minds of practitioners. Water can reach the ear and produce harmful effects either through the external auditory meatus or by way of the Eustachian tube. Water getting into the external ear produces a disagreeable sensation, as everybody knows from experience, but quickly runs out again from a clean and healthy meatus and, ordinarily, produces no further trouble. If, however, the ear contains much cerumen, this imbibes the moisture, swells up and blocks the canal; "water in the ear" which persists long enough for advice to be sought is nearly always due to cerumen and can usually be cured by its removal. The pressure of the swollen wax and the retention of moisture readily produce a dermatitis of the canal, and this is the usual cause of an external otitis in bathers; those with excessive secretion of cerumen should have it removed before their seaside holiday. In addition, people who have a tendency to eczema of the meatus often suffer an exacerbation of their trouble if they allow water to get into the ears, and whilst to some salt water seems to be more irritating than fresh, the water of public swimming-baths is apt to be heavily infected with micro-organisms. Unskilful diving from a height may cause rupture of the drum by mechanical force; but in general it can be said that the occasional entry of water into a healthy meatus is harmless, as is evident from the comparative rarity of trouble among innumerable bathers. All the same, as Mr. Walter Edmunds pointed out some time ago,[1] mammals, such as the water-shrew and seal, which have reverted to an aquatic existence, possess a mechanism for closing the meatus, the seal being also able to close its nostrils when submerged. The commonest cause of serious ear-disease from bathing is the entrance of water into an old, often dry and quiescent, perforation of the drum; and this may produce a very severe suppuration with all its attendant complications. Patients with a perforated drum should never be allowed to bathe without a completely efficient means of preventing the entry of water into the ear. Ordinary cotton-wool is useless; sheep's wool, being greasy and not hygroscopic, is better; a properly fitting rubber plug coated with vaseline is fairly reliable, but most satisfactory of all is a plugging material made of wax or plasticine mixed with fibre, which may be had from several instrument makers. A rubber bathing cap with ear-flaps should be worn over any plug. There remains, however, the second route of infection. People may develop otitis media after bathing though their drums and canals are perfectly healthy, and this is due to the entrance of water into the tympanum through the Eustachian tube, the inflammation varying from a mild tubal catarrh to severe otitis and mastoiditis. The chief factors which favour entry of water into the tubes are violent blowing of the nose after swimming, and swallowing whilst under water. Dr. George B. McAuliffe, of New York,[2] recently sent out a questionnaire to a number of prominent amateur swimmers of the New York Athletic Club, in an attempt to elicit why it is that this accident only occasionally happens, and how it is that water gets into the ears. He got replies from 12 swimmers of from 5 to 39 years' experience, and the answers were very various; only one thought diving injurious,

[1] THE LANCET, 1924, i., 1081.
[2] Medical Journal and Record, Sept. 15th, 1926.

and two of the three who blow the nose after emerging had had ear inflammations. There was an impression that salt water was more injurious than fresh, probably because it encouraged nasal secretion and blowing of the nose. Dr. McAuliffe's conclusions seem sound—namely, that in a healthy ear the use of plugs are unnecessary; that the only time that a plug is needed is when there is an open perforation or when the skin of the canal is irritated by the water; that bathers should not swallow while swimming, and that they should let the water drain from the nose and avoid blowing on coming out of the water. If blowing the nose and swallowing are avoided, no ear complication will occur.

THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

SINCE the establishment of the Irish Free State many of the chartered corporations in Ireland have found that their charters have become in some points defective. The Royal College of Physicians, for example, has found itself without visitors, since the public officials designated in its charters no longer exist. A more serious disability has been the suspension of its power to make new, or alter old, by-laws. For a by-law of the College to become effective it had to receive the approval of the Lord Lieutenant in Council. The Lord Lieutenants to the Privy Council disappeared when the Free State came into being, and while some of their powers were transferred to other bodies, in regard to others no such arrangement was made. The result, as far as the College of Physicians was concerned, was that there was no machinery by which it could make or amend by-laws, and several intended amendments have been held up for some years past. An Act for the amendment of charters passed the Oireachtas, however, a few months ago, which remedied this defect, and suitable action has now been taken. The Minister for Justice, as empowered by the Act, has issued an Order making the necessary amendments in the Charter of the College. The Chief Justice and the President of the High Court of the Irish Free State are nominated as visitors, and the Minister for Justice is himself constituted the approving authority for by-laws in place of the Lord Lieutenant in Council. In future, therefore, the College will be free, with the approval of the Minister, to make such by-laws as it thinks fit. The first change, which has already passed the College, will be to widen the scope of the examination for membership.

ENCEPHALO-MYELITIS FOLLOWING VACCINATION.

WHEN reviewing recently [1] a series of cases of encephalo-myelitis in which, according to Prof. H. M. Turnbull and Prof. James McIntosh, vaccination was a definite causal factor, we had occasion to refer to cases occurring in Holland during 1925. Further allusion to these cases appears [2] in an article by Dr. F. S. van Bouwdyk Bastianse, of The Hague, in its clinical and histological aspects in collaboration with Dr. J. P. Bijl, of Utrecht, who records his experiments on animals. Dr. T. T. Terburgh, of The Hague, supplies the epidemiological data. Their observations are based on their experience in Holland where from Jan. 1st, 1924, to July 1st, 1925, 35 cases, of which 15 were fatal, occurred of encephalitis following vaccination after an interval usually of 10 to 13 days. The cases were chiefly met with in small communes, sometimes closely adjacent to one another, and more than one case was often observed at one time in the same commune. Most of the cases were notified in March, when epidemic encephalitis was more prevalent than in the other months of the year. The vaccine used for the children who developed encephalitis came from three different institutions, and 12 calves served to provide the lymph. Dr. Terburgh found that encephalitis could be produced by inoculating the brains of rabbits with vaccine lymph and that in the brains of these animals a virus could be demonstrated which was apparently identical with Levaditi's neuro-vaccine. No infective agent could be found in the cerebro-spinal fluid of the affected children during life or after death. The writers' conclusions are as follows: 1. It is impossible to deny a connexion between vaccination and the encephalitis which follows it. 2. Post-vaccinal encephalitis is probably caused by an ultra-virus. 3. It is very improbable that post-vaccinal encephalitis is caused by the direct or exclusive action of vaccine lymph—there must be some unknown contributory factor. 4. It is most likely that the process of vaccination has given rise to the activation of a latent virus. 5. The supposition that this virus is the virus of epidemic encephalitis or one closely related to it offers the readiest explanation of the clinical and histological picture as well as of the epidemiological facts. The proof of the last two conclusions, however, is not yet forthcoming, and we are more inclined to accept the views of Turnbull and McIntosh.

[1] THE LANCET, Sept. 4th, p. 504.
[2] Nederlandsch Tijdschrift voor Geneeskunde, Sept. 18th, 1926.

PROFESSOR SCHMIEGELOW.

Dr. Ernst Schmiegelow, of Copenhagen, celebrates his seventieth birthday on Oct. 13th, when he retires from active service as chief of the Oto-laryngological Clinic at the Rigshospital. His friends in many countries are marking the occasion by presenting to the clinic a medallion portrait in bronze of their professor. The Royal Society of Medicine will be represented by Sir StClair Thomson, a past-president of that body, who will contribute a communication at a meeting of the Danish Oto-laryngological Society, to be held on Oct. 12th. Addresses will also be given by Prof. H. Burger (Amsterdam) and Prof. Carl von Eicken (Berlin), and other European leaders propose to unite in doing honour to the doyen of Danish oto-laryngology. Prof. Schmiegelow, who was a pioneer in his subject, studied for a time at the London Throat Hospital, and has been a frequent visitor to this country, where he has many admirers and friends.

THE LIVERPOOL HOSPITAL CONTRIBUTORY SCHEME.

AT a public meeting held in the Liverpool Town Hall on Sept. 27th a scheme of voluntary workmen's contributions towards the support of hospitals was adopted with practical unanimity. This scheme provides for the amalgamation of the existing Hospital Saturday and Sunday Funds and for the formation of a Liverpool Voluntary Hospitals' Council, to which shall be appointed an organising secretary of high standing—a whole-time official. The new council proposes to organise collections amongst workmen on the basis of 1*d.* per £ of wages per week, to which it is hoped that employers will add one-third more. The money thus collected will be handed over in proportionate sums to the various voluntary hospitals and convalescent homes in the district, with whom it is stated the entire responsibility as to its expenditure will rest. No charge will be made to the necessitous poor, but all other non-contributors to the scheme will be asked to pay towards their maintenance in hospital. Contributors and their dependents will be admitted and treated free. Judging by the success of the Sheffield scheme, the amount raised should be ample to solve all the financial problems of these institutions if it were not for the casual nature of a large part of the employment in Liverpool. A meeting of the new council will be summoned at an early date.

The scheme introduces a number of problems of vital importance to the medical profession in Liverpool, where there exists a Hospital Staffs Association in whose hands local interests may safely be left. In voluntary hospital administration elsewhere the principle holds that payment of a contribution does not of itself carry the right to the services of the local

hospital, which must depend in the final issue upon the needs of each case and its relative urgency. Assuming this principle to be fully upheld in the Liverpool scheme, the contributions might then be regarded as in the nature of voluntary subscriptions to a charity, the essential character of the Liverpool hospitals remaining unchanged. But it appears that distinction is to be made between contributors and non-contributors; in other words, the contributor is to receive a quid pro quo and his contribution becomes an insurance premium. It will be for the medical staffs of the Liverpool hospitals to adopt an attitude, at once humane and logical, to the continuously growing demand on their highly skilled service.

TRANSLUCENCY OF THE CORNEA.

OPACITY of the cornea is a common cause of impaired vision in every degree from the slightest defect of sight to complete blindness. It is, therefore, important to understand what causes corneal opacities and how far they are curable. The anatomical structure of the cornea consists of parallel fibrous lamellæ bounded on the outside by an epithelium and on the inner side by an endothelium, which normally protects it from infiltration by the aqueous humour. Slight opacities may be caused by injuries to the epithelium but this is soon regenerated and complete transparency may be restored. Infiltration of fluid into the substantia propria may be due to pressure as in glaucoma or to disease such as interstitial keratitis. In this case the infiltrating fluid contains cells and the opacity may be extreme. Nevertheless the infiltration may eventually be completely or almost completely absorbed and the transparency of the cornea restored. A third type of corneal opacity occurs from actual injury of the fibres of the substantia propria such as results from a deep ulcer or a wound. Here the opacity may be partly due to infiltration and, in so far as this is the case, treatment by such things as stimulating ointments may be partially effective, but there remain the cases in which there is actual replacement of the normal fibres of the cornea by scar tissue. In the worst cases such as follow a severe ophthalmia neonatorum the whole cornea may be converted into scar tissue, and in these no treatment which has hitherto been devised can possibly restore the transparency. A suggestion has been made by Dr. S. G. Moore, who has seen the wonderful specimens prepared by Prof. Spalteholz, of Leipzig, in which the tissues are rendered so translucent that, for example, injected arteries are readily seen in relief in transmitted light—that this process, applied to living tissues, might restore some measure of useful vision in cases of blindness due to opacity of the cornea. Dr. Moore believes this process to be secret, but reference to Bulletin No. V. (p. 41) of the International Association of Medical Museums shows that it consists in impregnating the tissues with a fluid of suitable refractive index, composed of oil of wintergreen and benzyl benzoate. Although the application of methods of this kind to living tissues was foreshadowed by Mr. H. G. Wells in his "Invisible Man," it can hardly be expected that living protoplasm should survive so gross an insult to its normal refractive index.

OTAGO MEDICAL SCHOOL.

AN experiment in clinical instruction is about to be made in Otago. The plan of university education in New Zealand is adapted to its topographical needs and differs from that elsewhere. The University of New Zealand is an examining and degree-granting body, with headquarters at Wellington; it prescribes courses and appoints examiners, but it undertakes no teaching. All instruction is carried on in the four constituent colleges—Auckland University College; Victoria College, Wellington; Canterbury College, Christchurch; and the University of Otago, Dunedin. The early settlers of Otago, in good Scots fashion, established their University before that of New Zealand was founded, and Otago has consequently retained the title of University, though it does not now grant degrees. Arts and science, and some other subjects, can be studied at any of the centres, but the professional faculties are concentrated at single colleges; engineering, for instance, at Canterbury College, and medicine at Otago University. Some years ago the Dean of the Otago Medical School put forward a proposal that the medical curriculum should be extended from five years to six, which had already been done, either avowedly or in practice, in various overseas schools. The proposal aroused considerable discussion, and the Senate of the University of New Zealand decided to refer the question to the New Zealand Branch of the British Medical Association for an opinion. A good many members were averse from the extension, and there was a general feeling that if a year were added to the course it should be a "clinical" year and also that facilities should be afforded for spending it in the public hospitals of other centres of the Dominion—namely, Auckland, Wellington, and Christchurch, and not wholly in Dunedin. This proposal, writes our New Zealand correspondent, could not be complied with in its entirety. There was never any intention of leaving the curriculum as it was, and merely adding another year during which students should kick their heels until they had put in the necessary terms to allow them to sit the final examination. One of the additional terms was required for the "intermediate" subjects, chemistry, physics, and biology, and one for the "first professional" subjects, anatomy and physiology, leaving only one term for additional clinical study. However three complete years, or nine terms, are now available for clinical work, and by the new scheme a student may elect to spend one, two, or three terms of the final year in the hospital of another centre, provided an adequate syllabus has been submitted by the medical staff of the hospital concerned to the Faculty of Medicine in Dunedin; all the hospitals have now submitted schemes, and one, at least, is providing quarters for the students. This public-spirited action on the part of the hospital staffs concerned will mean a considerable addition to their work. By this arrangement the students' clinical experience will be undoubtedly much increased, since the whole facilities of a considerable hospital will be available for a small group who have already had two years' ward-training. The result will be watched with interest by other schools.

THE DÜSSELDORF CONFERENCE.

THE eighty-ninth conference of Naturforscher and Ärzte at Düsseldorf from Sept. 19th to 26th was divided into 34 sections and attended by well over 8000 scientists and medical men from Germany and German-speaking countries, so that its mere size gave rise to difficulties in organisation, while the large proportion of natural scientists resulted in the treatment of medical subjects on lines suitable for the advanced medical student. But these difficulties were largely surmounted by Dr. Arthur Schlossman and Frl. Dr. Marta Fraenkel, who were responsible for the arrangements. The outstanding feature of the conference was a series of communications by Prof. P. Mühlens (Hamburg), Prof. F. Sioli (Düsseldorf), Drs. Hörlein and Röhl (Elberfeld) on a new synthetic remedy for malaria, to which the name plasmochin had been given. Tested first by Röhl on canaries infected with bird malaria, it was then administered by Sioli to paralytics under treatment by malaria, in whom repeated doses of 0·2 g. proved uniformly effective. Mühlens and his colleagues began to use the drug at the Hamburg Tropical Diseases Institute in August, 1925, and 134 cases from all parts of the world have now been treated with careful daily control of the blood. The preparation is almost tasteless and for this reason especially useful for children. Four to six weeks' treatment are required. Fever and parasites disappeared in a few days and relapses were less numerous than when quinine was

used. Above all, the new preparation was found to destroy the crescentic sexual forms which were banished from the circulation within five to seven days, while early treatment with plasmochin effectually prevented their appearance. The story of this successful search for a plasmodicidal agent was the sequel to an admirable account by Prof. Nocht (Hamburg) on the previous day of the various recent essays in chemotherapy, including the discovery of germanin (Bayer 205) which with its single haptophore group held its victims fast, like a limed twig, so that they fell a prey to their natural enemies. To English hygienists the joint meeting of the sections of hygiene and veterinary medicine was made noteworthy by the presence of Prof. Ostertag. The communication by Dr. Bahr (Copenhagen) on the endotoxin of the paratyphoid-Gaertner group rendered due credit to the work of the English bacteriologists. Prof. Miessner (Hanover) gave an account of paratyphoid and paradysentery in cattle with an important statement on paratuberculosis. Dr. Beck (Leipzig) reviewed the possibility of disease transmission by pigeons, the organism he had isolated being of the Breslau type. In another section much interest was taken in an account by Dr. P. Schwartz (Frankfort) of the effect of injuries to the skull and brain during childbirth, supported by convincing slides of morbid anatomical specimens. Hæmorrhage from the vena terminalis might account, he thought, not only for porencephaly but for the onset of hydrocephalus, syringomyelia, and even of some cases of epilepsy. During the week conducted visits were paid to the enormous Health Exhibition (Gesolei), Prof. F. Fülleborn acting as guide to the tropical diseases exhibit. The social side of the meeting was well organised, and the next conference might well attract more representatives from this country.

A LUNCHEON was given by Sir Kingsley Wood, Parliamentary Secretary to the Ministry of Health, on Tuesday last, at the Hotel Victoria, S.W., to an international gathering of port medical officers, who are now in this country as guests of the Government. The presence of the visitors, followed on the terms of the new convention, agreed upon at the International Sanitary Conference, with respect to sanitary measures at ports and their international arrangement.

Obituary.

DAVID EWART, O.B.E., M.D., F.R.C.S. EDIN.

Dr. David Ewart, of Chichester, who died on Oct. 2nd, was a practitioner of high reputation in West Sussex, where he had worked for about 25 years. He was educated in New Zealand and at the University of Edinburgh where he was Grierson Bursar in pathology and bacteriology in 1898. Soon after graduating with honours in the following year he was appointed to the Chichester Infirmary, where he remained as house surgeon for two years, after which he was elected surgeon and took up practice in the district in partnership with the late Dr. Skaife. From that time onwards he steadily built up a reputation for the infirmary and for himself. He started departments for ophthalmic and aural work and undertook an ever-increasing amount of major surgery of all kinds. At the same time he built up a large private practice and was in frequent demand as a consultant and as an ophthalmic and operative surgeon. The Chichester Infirmary was enlarged and improved in 1913, being reopened by the King as the Royal West Sussex Hospital, and in this work of reconstruction Dr. Ewart played an important part. The war broke out soon afterwards and the scope of his activities was further enlarged by his appointment as surgeon to the Military Hospital of 1100 beds formed by temporary conversion of the county mental asylum; this additional heavy work put a serious strain upon his health. Dr. Ewart could not take much part in non-medical affairs in the district, but found time for service as a member of the Council of the British Medical Association, and was at one time chairman of the Dominions Committee. He also held consulting appointments at the King Edward VII. Sanatorium at Midhurst and other institutions in the neighbourhood, and in April of this year was elected chairman of the board of management of the Royal West Sussex Hospital.

Dr. Ewart leaves a widow and six children.

JAMES BARRY BALL, M.D., F.R.C.P. LOND.

Dr. Barry Ball, who died at his home in Abingdon on Oct. 2nd, was well known in London before his retirement as a specialist in diseases of the ear, nose and throat, and was appreciated as a valuable colleague and a man of high ideals. He was born at Manorhamilton in County Leitrim in 1849, and studied medicine at University College, London, qualifying in 1870. After some years of general practice in Brixton he became a member of the Royal College of Physicians in 1885, and in the same year was appointed assistant physician to the West London Hospital, which he served with zeal and devotion for a long period. In 1887 he was given charge of the throat and nose department and ten years later took over the ear department as well, shortly afterwards resigning his appointment as physician so as to give his whole attention to this special work. In 1905 he left the active medical staff and was made consulting physician and a member of the board of management, positions which he held until his death. Dr. Ball's work for other institutions was also considerable. He was consultant physician to the Hospital of SS. John and Elizabeth, lecturer to the West London Post-Graduate College, and examiner in laryngology and otology to the Royal Army Medical College. For over 20 years he was physician to the Rock Life and other assurance companies, which he served always with tact and judgment. He was also the author of a Handbook of Diseases of the Nose and Pharynx which reached a fifth edition, and made numerous contributions to Quain's "Dictionary of Medicine" and to the medical journals. Dr. Ball's work was recognised by his election as President of the Laryngological Society of London and to the Fellowship of the Royal College of Physicians. Those who enjoyed his friendship speak of his loyalty and warmth of heart, whilst those who met him casually found that a retiring manner did not always conceal unusual and welcome wit.

Dr. Ball leaves a widow and one daughter. He lost his only son in the war.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Lt. Comdr. L. R. Warburton to be Surg. Comdr.
T. A. Cochrane to be Surg. Lt.

ROYAL NAVAL VOLUNTEER RESERVE.

Proby. Surg. Lts. (D) to be Surg. Lts. (D): C. T. Pomeroy and W. E. L. Brigham.

ROYAL ARMY MEDICAL CORPS.

Maj. A. H. Heslop retires on retd. pay on account of ill-health.

REGULAR ARMY RESERVE OF OFFICERS.

Col. F. Kiddle (late R.A.M.C), having attained the age limit of liability to recall, ceases to belong to the Res. of Off.

Lt.-Cols. L. A. Williams and G. B. Riddick, having attained the age limit of liability to recall, cease to belong to the Res. of Off.

MILITIA.

Maj. E. T. Holland retires on attaining the age limit.

TERRITORIAL ARMY.

Capt. J. Blackwood to be Maj.
Capt. (Prov.) R. M. Savege is confirmed in his rank.

ROYAL AIR FORCE.

Flying Officers B. W. Cross and J. MacConnell Kilpatrick are granted permanent commissions in their rank.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXCII.

TREATMENT OF ACUTE INTUSSUSCEPTION IN INFANTS.

THE crucial importance of early diagnosis of intussusception in infants may be gathered from operation statistics. Operation within 12 hours of onset is almost invariably successful, whereas the mortality-rate in cases left 24 hours or longer varies from 30 to 60 per cent. Every hour is thus of importance from the point of view of prognosis.

Diagnosis.

Acute intussusception occurs typically in strong healthy infants, often of the male sex, the commonest age being 4 to 8 months; there is a history of sudden onset of acute abdominal pain, occurring in spasms, shortly followed by vomiting and later by the passage of blood. Between the spasms of pain during the early stages the baby may appear perfectly healthy, and this should be remembered. Often the onset is less typical, the appearance of blood being delayed for many hours. It is in these cases that the palpation of the typical sausage-shaped tumour clinches the diagnosis, and unless this tumour is felt the diagnosis is doubtful. A thorough abdominal examination in every suspicious case is essential, and for this an anæsthetic is often required. Before giving the anæsthetic it is wise to make preparations to proceed to immediate operation should the intussusception be found, but this is not always feasible; for example, if operation entails a long journey the practitioner must make his own diagnosis before referring the child to the surgeon. The anæsthesia must be deep in order to get complete relaxation of the abdominal muscles, and the whole abdomen must be carefully and systematically palpated in order to find the tumour; this may be hidden in the region of the hepatic flexure by the liver, or at the splenic flexure if the tumour lies practically under the costal margin. Often the tumour is small and very mobile, slipping from under the examining fingers. In the absence, even under anæsthesia, of any palpable tumour, I myself do not operate. When the diagnosis is established treatment nearly always involves opening the abdomen. The only possible exception is when local conditions make surgical procedures impossible. Then, and only then, is treatment by the injection of fluids per rectum justifiable. The chief objection to this method of treatment is that it is impossible to tell whether reduction so effected is complete; during operation it is clear that it is the last inch or so which is the most difficult to reduce. However, there can be little doubt that a considerable number of intussusceptions reduce themselves and may give no further trouble, though recurrences among these cases are not uncommon.

Reduction by Operation.

Pre-operative treatment is of great importance, since these children are depleted of fluid as a result of the frequent vomiting. In every case it is wise to administer subcutaneous saline into the axillæ or loins before operating; improvement immediately follows the saline infusion. The patients should be well warmed up in bed for at least an hour, and a hypodermic injection of atropine, 1/150 gr., should be given half an hour before the anæsthetic. The operating theatre should be kept at a temperature of 75° F.; the child's limbs should be bandaged with cotton-wool, and when possible the table should be artificially heated.

Anæsthetic.—Where the child is not in good condition the anæsthetic of choice is gas and oxygen, with a minimum of ether in addition, but if this form of anæsthesia is not available ethyl chloride, followed by ether, gives almost equally good results. Anæsthesia must be deep, since should the intestines be forced out by straining, the operation not only becomes more difficult, but the shock is greater, and much time may be lost.

The *incision* depends on the site of the tumour. Where the intussusception is proximal to the splenic flexure, the muscle-splitting incision of McBurney gives ample room and can be rapidly performed. Where the tumour has passed into the descending colon this incision gives insufficient access and a vertical paramedian incision is indicated.

Operative success depends mainly on (1) rapidity, and (2) extreme gentleness in handling. The peritoneal cavity is opened and two fingers of the right hand are passed into the abdomen to seek the tumour. When it is found reduction is attained by milking it gently backwards along the colon within the abdomen, until the ileo-cæcal region is reached. Difficulty may be experienced at the two least mobile portions of the colon, the splenic flexure and the hepatic flexure, but only because they are awkward to reach and manipulate. The actual reduction gives trouble, as a rule, only in the terminal two or three inches, on account of the great swelling and œdema of the parts. At this stage the intussusception should be brought out of the abdomen and the milking process continued with great care. In a favourable case reduction can be accomplished without any damage to the peritoneum of the bowel wall. When the last portion of bowel is being reduced, the typical dimple will be seen where the intussusception commenced, generally within an inch or so of the ileo-cæcal valve. This dimple is a cup-shaped depression which should be carefully obliterated.

In some cases—generally those of long duration—the peritoneal coat of the cæcum may give way during reduction. This calamity may often be prevented by a simple manœuvre which, moreover, facilitates reduction; the tumour is surrounded by a hot moist swab and uniform pressure is exerted on it in order to reduce the œdema. When pressure has been maintained for some 30 seconds reduction is often effected easily. A tear in the peritoneal coat is not necessarily a sign of irreducibility, and unless it is obvious that reduction is going to be impossible or that the bowel is gangrenous, efforts should be continued in spite of it. It is important, however, that any tears in the large bowel should be sutured with very fine catgut, lest infection passes through the bowel wall and peritonitis ensue.

When reduction has been completed nothing further should be done. The abdomen should be rapidly closed. In children under a year it is a mistake to remove the appendix or to attempt fixation of the invariably mobile cæcum, since extra handling of the bowel in addition to the extra time required increases the risk of a fatal issue. A simple operation for reduction alone can be performed, from incision to closure, in seven minutes, and should never take more than 15 minutes in skilled hands. If the child is over a year old and is in good general condition the appendix may be rapidly removed.

Recurrence.—Since the operation of reduction does nothing to remove the conditions, whatever these may be, producing intussusception, it is curious that recurrence is so rare—about 2 per cent. in my experience. The fixation of the cæcum, while theoretically a useful procedure, does not seem to prevent recurrence of an intussusception at a later date.

Operative Technique in Irreducible Cases.

When the intussusception is irreducible the prognosis is always very grave, and it is rare for a child under a year old to survive operation.

When the intussusception is absolutely irreducible or is gangrenous the methods to be considered are: (1) Resection of the affected area with anastomosis of the bowel; (2) resection combined with temporary enterostomy to be followed later by anastomosis; (3) temporary enterostomy without resection. Several other procedures have been suggested. In my experience the only one giving satisfactory results in infancy and childhood is the first method mentioned above. Although the mortality in infants under a year is very high, this is undoubtedly the best procedure. A rapid resection between clamps should be carried

out, and, as a rule, a lateral anastomosis between ileum and transverse colon, or between two portions of ileum, is the most satisfactory way of dealing with the bowel.

Closure of the Abdomen.

When the reduction has been effected or anastomosis and resection performed, the abdomen should be closed as rapidly as possible. If the muscle-splitting incision has been used two layers of sutures are desirable, but to close the vertical paramedian incision through-and-through sutures of interrupted silkworm-gut introduced with a Doyen's handled needle should be used, the stitches being prevented from cutting too deeply by means of rubber tubing threaded on the silkworm-gut. In both cases Michel's clips are used to bring the edges of the skin into perfect apposition. A small gauze dressing is applied and is maintained in position by the application of a large oval piece of Mead's strapping. No bandage is required. The wound need not be dressed until the clips are removed on the fifth day, while the through-and-through sutures remain in for 10–12 days.

Post-operative Measures.

Post-operative measures consist chiefly in the administration of fluids and the maintenance of warmth. The child should receive subcutaneous saline four-hourly for 12 to 24 hours, and should be kept warm by means of an electric cradle in the cot. For the first few hours the foot of the bed should be raised, to mitigate collapse. The temperature should be taken three- or four-hourly as hyperpyrexia is not uncommon in the first 24 hours; if it occurs the electric lamp should, of course, be extinguished, but it is important not to bring down the child's temperature too rapidly, and unless the temperature rises higher than 104° F. no tepid sponging need be carried out. In an uncomplicated case a little sugar and water may be given by mouth after six hours; if the child is on the breast the milk should be drawn off and given in teaspoonful feeds every two hours for another 6 to 12 hours. If there is no vomiting the child may be put to the breast for five to ten minutes every three hours for the next 24 hours and given sips of water if thirsty. Thereafter normal feeding should be resumed. Aperients should be avoided for the first six days, after which a teaspoonful of castor oil may be given, provided the child is doing well. If, however, there is any sign of distension or any vomiting, a gentle rectal wash-out is preferable to the aperient.

Where resection has been carried out feeding should be commenced more gradually. It is wise to give nothing but water and albumin water for 24 to 36 hours, supplemented where necessary by subcutaneous saline. Should the abdomen become distended and vomiting recommence, the stomach should be washed out with a little sodium bicarbonate.

Post-operative Complications.—Vomiting may be troublesome for 24–36 hours, and if severe, should be treated by stomach lavage, repeated six-hourly if necessary; meantime subcutaneous glucose saline must be relied on for nourishment. *Enteritis*, sometimes occurring about the third or fourth day in an infant which has had to be suddenly weaned, is a complication to be dreaded. An immediate dose of castor oil is indicated, followed by routine medical methods, and very careful nursing may save the child. *Obstruction* is rare, except where due to a temporary paresis of bowel, which responds better to stomach and colon lavage than to stimulants such as pituitrin. When obstruction is due to peritonitis the prognosis is hopeless. *Recurrence* during convalescence calls for immediate operation, of which the result is often successful. Recurrence at a later date is nearly always diagnosed immediately by the parents, and the patients generally do well after a second operation.

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Special Articles.

THE ST. MARY'S POST-GRADUATE COURSE.

THE post-graduate course held for the fifth year in succession at St. Mary's Hospital, London, over the first October week-end was the most successful of the series, many practitioners availing themselves of the opportunity offered without fee to refresh their knowledge in some direction or other of modern medicine. The demonstrations of cases by Dr. C. M. Wilson and Mr. R. M. Handfield-Jones on Sunday morning do not lend themselves to brief notice, but of the ten more formal lectures an epitome of three may serve to indicate the practical and useful scope of the meeting.

The Scope of Cæsarean Section.

On Oct. 2nd, the first day of the meeting, Mr. Aleck Bourne considered the proper place of Cæsarean section as a means of delivery in abnormal labour. The first, and still the chief indication, is contracted pelvis, and to-day, after much clinical experience, most obstetricians agree that there are very few other abnormalities which are properly so treated. The deliberate operation should be done for contracted pelvis if, before the thirty-sixth week of pregnancy, the head cannot be made to enter the brim of the pelvis. Induction of labour is a better method for the minor degrees of contraction which would cause difficult labour at term. The great disagreement, however, ranges round the question of the operation after attempts at vaginal delivery have failed—in other words, "the failed forceps case." It is very commonly done for this condition, and justification is sought in the occasional escape of the mother from the fatal termination, but an experience based on two or three cases is of no value. Only by the consideration of a large number can an opinion properly be formed. The pressing dangers are an immediate shock, caused by a severe operation done for one who is already exhausted; later, sepsis, causing fatal peritonitis or sloughing of the abdominal wound and uterine fistula, and, in the future, risk of rupture of the uterus in a subsequent pregnancy or labour due to an imperfect union of the infected muscle walls of the uterus. Now the average mortality of the operation done before labour is about 1·5 per cent., while after attempts at forceps delivery it rises to 27 per cent. (Kerr and Holland's collection). This very sharp rise in the death-rate shows that the danger is very great, and should only be faced under exceptional conditions. Nor can we find justification for Cæsarean section, after failure with forceps, by a consideration of the fœtal results. Of 100 babies subjected to the fruitless stress of forceps and later delivered by the abdomen, nearly half did not leave the hospital alive, and of those who do survive there is an uncertain number who suffer from impaired and backward development throughout childhood. This means that the mother is being subjected to a risk of 27 per cent., and a much greater chance of subsequent ill-health due to uterine adhesions, fistula, &c., or even later rupture of the uterus, for the sake of a baby that has barely one chance in two of survival. Only rarely will forceps fail to deliver, given the essential lapse of sufficient time for moulding, but when they do fail the alternative is not Cæsarean section but the perforator. Central placenta prævia is probably the next commonest indication. The lateral and many marginal cases can be well and safely treated by pulling down a leg or rupturing the membranes, with or without plugging. Even central placenta prævia should only be operated on if the mother is in good general condition. To deliver by the abdomen when the mother is already blanched is to invite disaster. Such cases should be treated by the most conservative vaginal methods. If,

however, the condition of both mother and baby is good and the patient is first seen before or early in labour, then Cæsarean section will probably save both mother and child. Obstructing pelvic tumours compel abdominal delivery if they are actually incarcerated in the pelvis and cannot be pushed up. Certain malpresentations, such as the brow, the shoulder, or even the breech in an elderly primigravida may be treated by Cæsarean section, especially if there has been a previous stillbirth. On the other hand, Mr. Bourne concluded, the operation is a dangerous method of delivery for eclampsia when compared with conservative vaginal methods, inasmuch as it doubles the mortality, whether the case is mild or severe when first seen.

The Rheumatic Problem in Children.

On Oct. 4th Dr. Reginald Miller, dealing with rheumatic children, referred briefly to the magnitude of the problem considered as a national health question, and discussed some of the chief difficulties in dealing with the disease on a large scale and the possible lines of their solution. First, as regards the causation of the disease, hereditary factors are not of such moment as environmental factors such as climate, poverty, damp houses, industrialism, exposure to wet during attendance at school. So far as these factors can be controlled they must be left to the public health and school services. Secondly arises the question of tonsillectomy. Nearly every rheumatic child has chronic tonsillitis, and to leave such tonsils untreated is to fail to give the child its best chance. Early and complete tonsillectomy gives considerable protection against heart disease, though not apparently against uncomplicated chorea. Third is the difficult matter of the development of heart disease. This often occurs while the child is apparently well and attending no doctor. Practitioners and hospitals can do something by instructing parents in the dangers of the disease, but to meet the difficulty properly some form of supervision of the children must be evolved. Parents must be taught to bring their children for examination every few weeks whether they appear ill or not, just as in cases of epilepsy or syphilis. In hospital practice it would be easy to establish a "rheumatism bureau," the children being listed and sent for to be seen by their respective physicians periodically. A better plan would be to establish a "rheumatism supervisory centre," open once a week, where cases can be sent for periodic examination while they are apparently well and arrangements are made in writing for the child to go back at once to its own doctor should acute symptoms supervene. With this system a good deal of useful research work could be undertaken. In dealing on a large scale with the problem of rheumatism and heart disease it is to be hoped that the mistakes made in the antituberculosis campaign may be avoided. We do not, said Dr. Miller, want the so-called expert and the treatment clinic. More beds are needed for children with damaged hearts to obtain the prolonged modified rest so necessary for them; these might be provided in special wards of convalescent homes or special hospitals in the country, provision being made for education and for the easy transfer of cases between hospitals and rest-homes.

Use of Radium in Gynæcology.

On Oct. 4th Mr. T. G. Stevens said that at present radium was chiefly employed in gynæcology in the treatment of carcinoma of the cervix, carcinoma of the vagina, and the severe hæmorrhages of chronic metritis. The attitude of most surgeons, he said, was that in carcinoma of the cervix radium applications should be reserved for clinically inoperable or borderline cases, in the belief that extended panhysterectomy gave better results in operable cases. There were no data at present available to prove this belief, as no large series of operable cases had been treated by radium alone, and it was quite possible that with increasing knowledge of the right technique the results of radium treatment alone in operable cases would prove to be as good as or better than those obtained by operative means. The method of application, said Mr. Stevens, varied in different clinics; in some of them concentrated doses were applied inside the uterus and in the vagina by means of platinum tubes containing 50 or 25 mg. of radium element; in others the maximum dose determined upon was applied by means of needles containing small amounts of radium element spread out around the growth by circular implantations. At St. Mary's Hospital each of the needles used contained 2 mg. of radium element; but in France the tendency was to employ even smaller doses (1 mg.), using a large number of needles and leaving them in situ for a correspondingly longer time. There was not at present sufficient evidence to show which of these two methods gave the better results. The dose given in any case was computed by multiplying the number of milligrammes of radium element used by the number of hours of the application. In general it might be said that 2400 mg. hours was the usual dose, but in the case of large growths this might be considerably increased. The first dose might be followed by a second after three weeks had elapsed, using a similar amount of radium, but after this no further treatment should be given for six months; no benefit appeared to result from any further application, and in some cases, indeed, it seemed to have been harmful. Before applying radium, continued Mr. Stevens, it was most important that the growth should be disinfected as far as possible. A useful method was to pack the vagina with a strip of gauze soaked in 10 per cent. Milton solution for 24 hours, repeating the packing twice, and then to swab the growth all over with flavine solution just before applying the radium. It was better not to curette the growth, as this appeared to open up avenues for infection and dissemination. When concentrated tubes were used, one should be placed in the uterine cavity well above the growth, and others should be applied accurately against the vaginal surface of the growth. The latter were often difficult to keep in place, and sometimes must be sutured to the vaginal roof to ensure immobility. The vagina must be packed with gauze soaked in flavine, taking care to push the rectum as far away from the radium tubes as possible with the gauze pack. This was done to protect the very sensitive rectal mucosa from the radium rays, and to prevent fistula formation. Whilst the bladder seemed to be much more resistant to the rays than the rectum, it also could be protected by carefully applied gauze packing. In most cases it was advisable to suture the labia together, to prevent any extrusion of the gauze pack, and to insert a self-retaining catheter into the bladder so as to avoid any disturbance due to micturition. The same technique was used in the treatment of carcinoma of the vagina. Concentrated tubes were nearly always used, and were generally sutured in direct apposition to the growth. In chronic metritis, said Mr. Stevens, in conclusion, radium was at the present time the most useful means of treatment. The result aimed at was complete cessation of menstruation, which formerly could not be secured except by hysterectomy or tedious X ray treatment. Chronic metritis in women over 40 usually caused very severe and prolonged menstrual losses, and these could be completely stopped by a single application of radium—100 mg. for 24 hours placed in the uterine cavity after dilatation. Curettage was usually done in such cases to eliminate the possibility of carcinoma of the body of the uterus.

ORTHOPÆDICS AT BIRMINGHAM.—The first annual report of the Birmingham Cripples' Union and Royal Orthopædic and Spinal Hospital, as an amalgamated institution, records an enormous increase in the work and heavy unsatisfied demands. It is intended to transfer all bed cases to an open-air suburban hospital, the site for which has been given by Mrs. George Cadbury. The full scheme contemplates a hospital of 300 beds which will serve as the orthopædic centre for Birmingham and the Midlands.

THE TWELFTH INTERNATIONAL SANITARY CONFERENCE.

A NEW CONVENTION.

THE twelfth of a series of International Sanitary Conferences which have regulated quarantine procedure, at first in Europe and later throughout the world, was convened in Paris on May 9th of this year, and resulted in the signature of the Sixth International Sanitary Convention.

The first of these conferences met at Paris in 1854, and those succeeding it have each in turn shown a widening view of quarantine action and have reflected the steady growth of knowledge. The earlier conferences were summoned to protect Europe from plague and cholera introduced from other continents, but the tendency has been more and more to look on the world as an organic whole, each part of which is to be guarded by wise and suitable quarantine precautions against the spread of epidemics. At this last conference 70 different nations and territories were represented, as compared with 42 in 1911 and 23 in 1903.

After the conclusion of peace the Office International d'Hygiène Publique, which is the body entrusted by international agreement (Rome Accord 1907) with the duty "of suggesting modifications that it might be advantageous to make to the Conventions" undertook a draft revision of the 1912 Convention. This revision was rendered necessary by the results of scientific research, by the lessons learnt in the war and in epidemics after it, and by alterations of political boundaries and conditions. In 1922 a draft revision was completed and delivered to the French Government for communication to the Powers. In February, 1925, a final revision was ready. It was on this draft that the new Convention was based, and it was owing to this preliminary work that the conference was able to finish its work in a relatively short time, in spite of the wide and various alterations proposed.

The conference assembled on May 10th at the Ministère des Affaires Etrangères, where its sittings were continued until the signature of the Convention. It was opened by Mr. Durafour, the Minister of Health; Mr. Camille Barrère, the senior delegate of France, who had presided over the 1903 and 1911 conferences, was elected president, and Dr. H. Pottevin, who has since been elected director of the Office International, was appointed rapporteur-général.

Although the draft revision had been accepted as a basis by the representatives of the various Powers, several questions and even principles of action remained at issue, and involved long and close debate; but in the end a text was agreed upon and the Convention was signed by most of the delegates on June 21st. It should prove a good practical instrument, with enough elasticity to allow for the differing conditions of the territories concerned, yet sufficiently binding, on the one hand to ensure adequate defence against epidemics, and, on the other, to prevent exaggerated action.

The New Convention.

The scope of the Convention is extended to include typhus and small-pox in addition to plague, cholera, and yellow fever, which were dealt with in the last Convention.

It early became apparent that there were two tendencies of thought as to the nature of the Convention to be drawn up. One aimed at an instrument that should definitely regulate quarantine action under all circumstances and render its execution almost automatic. The other held that a Convention dealing with such varying conditions of climate and people must be an elastic instrument allowing individuality of action within clearly defined limits. The latter view was adopted by the conference, and this principle is clearly established in Article 15, which is in fact the key to the Convention's principle of action. It lays down:—

1. That any ship may be thoroughly examined by the sanitary authority on arrival if circumstances require it whether it is from an infected or from an uninfected port.
2. That the sanitary procedure is to be determined by the conditions existing on the ship and by the medical history of the voyage.
3. That it rests with the Government to determine in accordance with the Convention what procedure is applicable in its own ports.
4. That the measures laid down by the Convention are to be considered a maximum within which the Government may take action.

This elasticity of action is further assisted by Article 57, a very important Article which enables Governments, taking into account their particular situation, to make special arrangements among themselves so that the sanitary measures of the Convention may be more efficacious and less burdensome. Thus, for instance, States can mutually arrange to dispense with elaborate precautions at the port of arrival in consideration of special precautions taken at the point of departure or on the voyage.

Notification of Diseases to Foreign Governments.

Under previous Conventions notifications were made through diplomatic channels—a method which was slow and cumbersome. It was clear that the time had come to establish a central clearing-house of sanitary information, which should rapidly communicate to all concerned information of the occurrence or outbreak of epidemic diseases, and which should collect and distribute to the signatory States details of the sanitary condition, equipment, and organisation of the various ports. The Convention constitutes the Office International the authority responsible for carrying out these duties. At the same time it empowers the Office to make arrangements with the Health Committee of the League of Nations, the Pan-American Sanitary Bureau, and similar organisations, to facilitate the fulfilment of its duties under the Convention, on the understanding, however, that these arrangements do not involve any infringement of the Rome Accord. Thus to carry out its new duties the Office International will be able by arrangement to make use of the Epidemiological Intelligence Centres already existing—i.e., the League of Nations Bureau at Geneva and its branch office for the Far East at Singapore, and the Pan-American Centre at Washington and its branch at Montevideo.

Classification of Ships and Deratisation.

Under the old Convention the conditions which caused a ship to be classified as healthy, suspected, or infected were laid down in a common category for the three diseases, in spite of the epidemiological differences in their behaviour. In the new Convention a separate subsection is devoted to each of these diseases; these subsections specify for each disease the conditions which entail a ship's being classified as healthy, suspected, or infected, and state what action should be taken in each case. This rearrangement will be a great advantage to all concerned.

Certain alterations were necessitated by increased epidemiological knowledge. The paramount importance of the rat and the flea in the spread of plague had to be recognised. It was not considered advisable to make the first case of rat plague notifiable under Article 1 of the Convention in the same way as human plague, although this was strongly urged by some of the signatory Powers; but under Article 6 Governments undertake to do all in their power to keep themselves informed as to the conditions of rats in their ports, and to furnish full information on the subject at regular intervals to the Office International.

The Convention exacts either the permanent rat-proofing of ships or deratisation every six months. Ships thus treated must be given a certificate

exempting them from further deratisation for six months; but, on the other hand, the sanitary authority is given authority to deratise a healthy ship in exceptional circumstances and for well-founded reasons communicated in writing to the captain. In this way the balance is maintained between the desirability of keeping down the rat population on ships and the hardship inflicted on shipping interests by repeated and possibly unnecessary deratisation.

Regulation of Travel and Transit.

Cholera.—The Convention recognises the importance of anticholera vaccination by exempting in certain cases persons vaccinated against cholera from detention under observation. The importance of the cholera carrier receives limited recognition only. The conference adopted the view that the examination of healthy persons travelling on ships coming from an infected area demands such elaborate organisation and technique and involves so much inconvenience to passenger traffic that its enforcement is impracticable, and that reliance should rather be placed on anticholera vaccination. The Convention, however, requires persons under observation or surveillance to give facilities for bacteriological examinations if considered necessary; this enables healthy persons on an infected ship to be examined for the cholera vibrio during the period of observation or surveillance.

Yellow Fever.—The regulations dealing with this disease are remodelled so as to give full recognition to the part played by *Stegomyia calopus* in its transmission.

Emigrants.—A new section is introduced dealing with emigrants. This section enforces the medical examination of all pilgrims at the point of departure, so that rejections at the frontiers of countries of transit and destination may be reduced to the fewest possible, and recommends that certain medical and sanitary arrangements should be made at the port of departure and on the voyage.

Bills of Health.—A new Article recommends (1) that Bills of Health should be issued free of charge; (2) that charges for consular visas should be equivalent to the cost of service only; and (3) that special agreements should be made with a view to the gradual abolition of consular visas and Bills of Health. When the Office International is working as an intelligence bureau and port authorities are in consequence kept fully and promptly informed of the sanitary conditions at other ports, the need for Bills of Health and consular visas will have ceased to exist.

Merchandise and Baggage.—The new Convention lays down that merchandise and baggage arriving by sea and land may not be forbidden either entry or transit. The only measures permitted are disinsectisation, deratisation, and disinfection, and these only in special circumstances. This is a great advance on the 1912 Convention which permits the prohibition of entry of merchandise in the case of plague and cholera—a prohibition that cannot be justified on epidemiological grounds.

Pilgrimages.—The sanitary supervision of pilgrims travelling by the Hedjaz railway, entrusted by the 1912 Convention to the Constantinople Superior Board of Health, which ceased to exist soon after the outbreak of the world war, is now entrusted to the States traversed by the railway. Similarly, the sanitary supervision of the Black Sea ports and the Straits, formerly under the charge of the same Board, is undertaken by the Turkish Government which is a signatory of the Convention.

An important Article entrusts to the International Quarantine Board of Egypt the duty of transmitting to the sanitary authorities of the countries concerned and to the Office International all sanitary information as to the pilgrimage and as to the sanitary conditions of the countries through which the pilgrims pass. The International Quarantine Board, in addition to its other functions, thus becomes an intelligence bureau for the pilgrimage area.

MEDICINE AND THE LAW.

Milk Prosecution: Sample 50 per cent. Deficient in Fat.

THE Sale of Food and Drugs Acts are intended to protect the community from the disadvantages and dishonesties of adulteration. They penalise sales "to the prejudice of the purchaser" of articles of food or drugs which are "not of the nature, substance, and quality" demanded. Where the article of food is milk, cream, butter, or cheese, the Minister of Agriculture may make regulations determining what deficiency in the normal constituents of such foods, or what addition of extraneous matter or proportion of water, in any sample shall raise the presumption (until the contrary is proved) that the food is not genuine or is injurious to health. In 1901 it was provided by the Sale of Milk Regulations that, if a sample of milk (not being sold as skimmed, separated, or condensed milk) contained less than 3 per cent. of milk-fat, the milk should be presumed (until the contrary was proved) not to be genuine by reason of the abstraction therefrom of milk-fat or the addition thereto of water. In discussing lately the unsuccessful prosecution of a Norfolk farmer, it was shown that the standard of 3 per cent. of milk-fat can be easily evaded. The farmer, it may be remembered, showed that the deficiency of fat in a sample from his churns (a deficiency of 42 per cent. below the standard) was not due either to the abstraction of fat or to the addition of water. He and other witnesses proved that the milk had not been tampered with from the time it left the cow to the time it reached the purchaser. He had a perfectly good explanation of the deficiency—namely, that he had been adopting a course of partial milking, the fore part of two cows' milk being placed in churns for sale, the after part being left for the cows' calves. The prosecution alleged it was common knowledge that in such a course of milking the fore part of the milk is less rich in fat. It is common sense that, if a farmer knows that he is giving the calves the benefit as against the purchaser, his sale of the less rich milk (which thereby falls below the prescribed standard of purity) should be treated as a sale to the prejudice of the purchaser. The purchaser should at least have a right to be told that he is not getting what he expects. This, however, is not the law. Owing to the wording of the Acts and Regulations it was possible for the courts to decide in 1917 (in the Case of Grigg *v.* Smith) that, where there is a course of exceptional milking, the farmer is at liberty to prove his milk "genuine" if he proves that it has not been tampered with. It is genuine, of course, in the sense that it is natural milk, taken from the cow, unadulterated and undiluted, but the purchasers, who suppose that they are buying milk of the standard prescribed by the Regulations, are certainly prejudiced. The farmer's defence is easy. Unless there has been deliberate adulteration or dilution, he can call witnesses to say the milk was never tampered with. He has only to explain to the magistrates that he had adopted a course of milking which prejudices the quality of milk sold to the purchaser, and he escapes any penalty for selling milk to the prejudice of the purchaser. In the recent Norfolk case the magistrates suggested to the farmer that, if the after part of a cows' milk was being left for her calf, the milk of that cow should not be placed on sale. In an earlier case it is believed that the bench suggested to another farmer who had employed this defence that he should consider the use of oilcake or other special food to improve the quality of the cow's milk so that the purchaser did not suffer. But these magisterial suggestions carry no compulsion, and meanwhile the deficient milk is presumably sold at full price and the purchaser is, in fact if not in law, prejudiced.

This point has been emphasised by repetition since yet another milk prosecution has recently failed on the same ground. The Ilfracombe Urban District

Council, on Sept. 20th, prosecuted a farmer who had supplied milk of which a sample showed 50 per cent. deficiency in milk-fat. The bench dismissed the case, though holding the deficiency established, because it was not proved that the milk had been tampered with. The analyst reported that the sample did not contain added water; the prosecution suggested that there had been an addition of scalded milk. This the farmer denied, though in cross-examination he admitted scalding his evening milk which he said he gave to his calves and pigs. The statement made on behalf of the defence, as summarised in the *North Devon Herald*, was that the farmer kept shorthorns and crossbreds which were not rich milkers. One cow had a calf running by her side; another had just had the calf taken from her. In such circumstances, it was frankly admitted, cows would hold their milk back and it was said to be well known that the fat was contained in the last of the milk. If farmers will agree in this admission they will appreciate the purchaser's point of view. Calves are entitled to their natural nourishment, but the law must somehow manage to prevent the nourishment of the calf interfering with that of invalids and children.

Chemist's Supposed Error: Doctor's Initials Illegible.

A year or so ago in an action for damages in the High Court there was a question of the proper proportion of a drug prescribed by a doctor, and its decision turned upon the correct deciphering of the figures in the prescription. This case, in which the plaintiff did not succeed, is indirectly recalled by a recent incident in which a Birmingham chemist is said to have sold in error pills containing one-fourth instead of one-fortieth of a grain of strychnine. The purchaser had presented a prescription dated 1921, but the doctor's initials could not be deciphered, and the chemist, on discovering his error, was unable to identify and warn the purchaser. The prescription bore the name of Mrs. Penn. In the hope of retrieving the pills and avoiding any unfortunate consequences of the error he believed himself to have committed, the chemist is understood to have sent telegrams to all persons named Penn in the Birmingham directory and to have invoked the aid of the police and the publicity of the press and of the British Broadcasting Company.

It was a case apparently of absence of mind, not of misunderstanding the specified proportions of drugs. The lay public, however, will doubtless connect the incident with its habitual pessimism as to the legibility and intelligibility of doctors' prescriptions. Custom has sanctioned the use of the doctor's initials just as, in the different field of marine insurance, custom has sanctioned the initialling of brokers' slips. Initials are accepted by the law courts as equivalent to full signature (if intended as such) in cases under the Wills Act or in the authentication of agreements within the Statute of Frauds. In connexion with the Dangerous Drugs Acts, where it may be important to identify the writer of a prescription, regulations have enacted that the prescription "must be in writing, must be dated and signed by the medical practitioner, registered dentist, or registered veterinary surgeon as the case may be, with his full name and address." Parliament has insisted upon clear handwriting in dealing with another vocation. The Pawnbrokers Act of 1872 obliges pledge-books and pawn-tickets to be written "in a fair and legible manner." There is probably no other example of an express statutory obligation of legibility, though there are plentiful occasions when the law requires written signatures to certificates, records, and other documents. A deliberately illegible signature might conceivably be held no signature at all.

THE LISTER CENTENARY.—The centenary of Lord Lister's birth falls on April 5th next year, and the Royal Faculty of Physicians and Surgeons of Glasgow, the Corporation of the City, the University, and other local public bodies are conferring as to the best method of celebrating the occasion.

THE HUMAN FACTOR IN INDUSTRY.

REPORT OF THE INDUSTRIAL FATIGUE RESEARCH BOARD.

REFERENCE was made in our issue of Sept. 18th to the contents of the latest report[1] of the Industrial Fatigue Research Board; some of the investigations into human activity brought together in the admirable analysis given of the Board's work since its inception call for more extended notice.

Hours of Labour.

The topical subject of hours of labour has received much attention; here is a matter of which Mr. W. L. Hichens rightly says[2] it is "to-day a subject of political controversy rather than of scientific inquiry; this is to be regretted. . . ." Many studies of output by the hour of each shift, by each shift of the day, and by each day of the week, have been made. Curves representing the results exhibit human activity as varying with the type of work performed; for physical work the curve rises as the muscles warm up, but falls as fatigue comes on; for monotonous work the curve gradually declines, to rise as the spell draws to an end. Maximum output, as exemplified by the curves for the best workers, is found associated with curves which rise steadily from hour to hour, from shift to shift, and from day to day. Output being the objective of industry, study of curves so that their shape may be improved by modifications in length of spells, and in number of hours worked, and by organised rest pauses, becomes a subject for scientific research. Thus inquiries in steel smelting, tin-plate mills, and glass-making, when contrasted with textile processes, show that increase in hourly output follows reduction in hours of work in proportion to the extent to which the process is manual rather than automatic. The optimum periods for work can clearly be determined by simpler and more accurate means than the hit-or-miss methods of present-day disputes.

Other Factors: Ventilation, Illumination.

Hours of work, however, can only refer to prevailing conditions of labour; if these latter are modified by introducing labour-saving devices, adequate ventilation or improved illumination, the problem alters. Here the subject of ventilation, including the temperature and humidity of the air, has been the subject of extended research following up the fundamental principles laid down by J. S. Haldane and L. Hill. Thereby the whole outlook on ventilation has been profoundly changed; the objective now is to produce the correct cooling power of the air, having regard to the work in progress, more for heavy work, less for sedentary work; no longer are chemical impurities and emanations called in to explain the ill-effects of stagnant air. Instances are quoted from a number of industries of output varying from 10 to 15 per cent. with variations in the cooling power of the air. Ventilation is for the most part under direct control; but the different standards found in such diverse places as laundries, potters' shops, shoe factories, and weaving sheds, indicate that this control is not well exerted. Moreover, ventilation should be at least as cooling for the head as for the feet; the reverse more usually prevails, but when correct adjustment is made comfort and output are increased. One of the most striking points throughout the investigations is that optimum conditions for output, whether by arrangement of hours or of environment, are found to coincide with a minimum of sickness and of accidents—in other words, the greater is the attention paid to the human factor in industry the

[1] Sixth Annual Report of the Industrial Fatigue Research Board to Dec. 31st, 1925. H.M. Stationery Office. 1926. Pp. 126. 3s.

[2] The Physical and Mental Effects of Fatigue in Modern Industry. By W. L. Hichens, Brit. Med. Jour., Sept. 11th, 1926, p. 480.

greater is the return, expressed in output, obtained for wages paid. Once this rule is appreciated, any influence which lessens lost time may be accepted as benefiting output; any influence which results in greater output may be accepted as beneficial to health. Thus the influence of illumination upon output—an influence which, though under direct control, is terribly neglected—is great; its influence on accidents can be measured; its influence on health is less easy to determine, but may reasonably be accepted; over 20 per cent. diminution in efficiency in weaving was found in the darker hours of winter days, while the weekly hourly output rose steadily from December to March.

Vocational Adaptation.

Even more fascinating than the results to be obtained by correct planning of hours and by perfecting the environment of work are those associated with fitting workers to their work and teaching them how to perform it; for example, improved movements at sweet-dipping produced 88 per cent. more output with less exertion, and reduced the time taken to polish table-forks by 61 per cent. Generally inefficient workers use actually more energy in accomplishing less than do efficient ones; thus one good metal-polisher produced 3·80 articles per minute for a total effort of 39·2, as against another who produced 2·54 articles for an effort of 71·3. Another matter of interest emerges; improvements in methods, in environment, or in hours, always benefit the less efficient workers most—i.e., they help most those who need help most, rather than thrust farther ahead those who have already outstripped their fellows. Since the bulk of the industrial population consists of average or poor workers, the increase in output, in health, and in contentment, to be obtained from adopting the principles which are thus being brought to light is hard to overestimate. From the health point of view alone this second industrial revolution, which is foreshadowed and has indeed already commenced, holds out prospects of hygienic and economic returns far greater and more lasting than all other schemes for betterment of the public health; the movement is advancing on power derived from scientific research.

We recommend perusal of this report, which is liberally illustrated, to everyone interested in the laws of health and activity, and congratulate the Board on work done in a difficult field, and their secretary on this excellent presentation of the whole.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Sickness Insurance Clubs.

THE quarterly report of the Board of Health shows a steady diminution during the last six months in the number of persons insured against sickness in the compulsory Krankenkassa, or panel clubs. This is due partly to the emigration of labourers, but chiefly to the protracted and increasing unemployment of a large proportion of the working population. Every month the membership shows a fall of from 5000 to 7000, the largest reduction being noted amongst tailors and furriers, and the next amongst bootmakers and joiners. On the other hand, there has been an increase in membership of the compulsory Krankenkassa of the federal civil service and the municipal service, though this is more than outnumbered by the decrease in the other clubs. As regards the medical service in these organisations, there are two systems in operation. The institutes of the civil and municipal and railway servants are allowed to choose any doctor they like so long as he lives in the same district, whilst other institutes appoint their own doctors at a fixed monthly salary. Both doctors and patients prefer the free choice system, for it allows the patient to consult a doctor in whom he has faith and confidence, and it enables the medical man to make a better living, since he is paid according to the amount of work he does.

Difficulties of Vienna Medical Organisation.

Economic conditions in Vienna have taken a decidedly bad turn during the last few years, and the change has especially affected brain-workers. Members of the medical profession have suffered perhaps more than any, and it was in the attempt to improve their position that a body called the Economic Organisation of the Vienna Profession came into being a few years ago. This has managed to bring some kind of order into the relations between doctors and their patients, both private and club, but the general trend of evolution in this country is directed towards socialisation, and increasing numbers of the population are coming under the scope of some or other Krankenkassa. The Economic Organisation has of course been unable to prevent this—a fact which has caused a good deal of dissatisfaction amongst practitioners. When a few months ago the new board of the Organisation was elected the opposition against its recognised head, Dr. Stritzko, was remarkably successful, and recently he has found it necessary to resign his position as the profession has received a further serious blow which he was unable to avert. Two new gynæcological and obstetric hospitals with 240 beds have been opened in Vienna, where private patients, relations of members of the Krankenkassa, will be received for confinement—an arrangement which deprives the general practitioner of prospective patients. The resignation of Dr. Stritzko leaves the Organisation without a leader, and it is possible that it will fall to pieces and that the profession will thus lose a valuable means of defence. Every effort is, of course, being made to prevent such a lamentable event.

The Accident Hospital of Vienna.

A year or two ago the Union of Sickness Insurance Institutes of Austria, after a thorough study of the statistics of industrial accidents, founded a special hospital for accident cases amongst its members. In the report published by the union it was shown clearly that in the vast majority of such cases the actual losses of the institutes and their insured members——due to cost of treatment and loss of wages and time—could be reduced by 90 per cent. if immediate and adequate aid was provided to the victims of the accident. In the hospital, which is an absolutely independent corporation, all cases of industrial accidents, as well as all other accidents, are received, and a specially trained staff is entrusted with investigation into every single case, so as to get a clear insight into its technical and objective features. An operating theatre fitted with all appliances for orthopædic surgery, a hall for mechanotherapy and electrotherapy, and, of course, a first-class X ray outfit are to be found at the hospital, which is in the centre of the industrial district of the capital. Forty beds are provided for, but at present only half of this number are in use as the majority of the patients are out-patients. The staff consists of the chief surgeon, two assistants, one X ray specialist, two visiting physicians, and six nurses. The first report shows that this accident hospital has saved the insurance institutes about £18,000 in the first year.

Blood Comparison in Forensic Medicine.

In a paper presented to the Medico-legal Institute of Vienna recently Prof. H. Sperl and Prof. Werkgartner discussed the attitude of the law towards the newer methods of forensic medicine as practised in this country. Only reluctantly, as they pointed out, is any use made of methods which are now available to settle some important questions of paternity. The discovery of the four human blood-groups is now recognised in the law courts as a legitimate proof—in the negative, of course—and it is interesting to note that in all Austrian hospitals the history of the patient must henceforward contain a note of his blood-group. Recently quite a number of paternity suits have been

heard in which claims have been substantiated by this method and previous judgments have had to be reversed. Three times men who had been paying for the support of their alleged offspring for various periods have had their cases reopened and made good their denial of paternity, with the result that they had no more to pay for upkeep. It may also be remarked that personal identity can be established or strengthened by the examination of the blood-group, when dactyloscopy, for instance, is impossible. But a wider scope is open for the blood-test in the diagnosis of blood-stains. When such stains are found on clothing or on the body of a person in connexion with a suspected crime they are mostly attributed by the accused to epistaxis, or menstruation, or to some slight injury, or to domestic animals. The determination of the blood-group of the suspected individual will very often settle the question at once, but the forensic doctor must bear in mind that damage by external factors is sometimes very detrimental to the normal reaction of this test, which should therefore be left to experts.

Municipal Sanatorium for Tuberculosis.

Three years ago the City of Vienna opened a special sanatorium for tuberculosis, consisting of 18 pavilions, situated in a huge park, facing south, on the outskirts of the city. Up-to-date equipment, including laboratories, surgical and X ray apparatus, and facilities for recreation ensures the highest degree of efficiency in treatment. Women and children of 4–14 years are the only patients, and 500 of them can be accommodated; they remain for periods of not less than three and not more than six months. Two pavilions, for 40 patients each, contain mild cases of active tuberculosis without bacilli in the sputum; in another group of pavilions are housed 100 children with affected hilus glands and slight pulmonary disease; whilst a third group contains 80 beds for open and closed disease of mild and moderate severity, and 60 beds are devoted to cases with open cavernous disease and laryngeal tuberculosis. The chief agents in treatment are the open air, hydrotherapy, and natural or artificial sunlight; the normal diet contains 3000 calories, increased as required, and two pints of pure milk daily is the minimum dose for each patient. Pneumothorax and tuberculin treatment are, of course, used where indicated, also the laryngeal phototherapy of Wessely. The sputum is disinfected in a special department and so are the books read by the patients. The children are kept constantly in the open air and are taught by special school-teachers. Instruction in prophylaxis and hygiene is given to every inmate of the institute, which has had 3523 patients since May, 1923.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are some of the health statistics for 1925 for three countries.

Name of county.	Estimated mid-year population (R.-G.).	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.	
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Heart disease.	Infant mortality.	Maternal mort. from childbirth.
Derbyshire ..	611,700	20·4	11·4	0·79	0·99	2·3	1·4	78	3·8
Hampshire ..	405,800	17·8	11·1	0·77	1·40	1·5	1·8	52	4·3
East Sussex ..	260,100	13·6	12·0	0·79	1·72	1·7	2·1	44	2·7

Derbyshire.

Dr. W. M. Ash points out that the south-western and western portion of the county is undulating agricultural land, whilst the northern part is mountainous, and the eastern part is a coal-mining and industrial area. A great deal is being done to meet the shortage of houses, but much more is required. During 1925, 582 houses were erected under housing schemes and 1707 by private enterprise with State assistance. Groups of houses, built adjoining existing villages and sometimes doubling the population of these, create drainage difficulties. The sewage arrangements cannot bear the additional burden, and owing to the low rateable area before the new houses are erected the extension of the sewerage scheme cannot be undertaken. On the other hand, it is a costly matter to provide temporary cesspools which will be abolished when the sewage works are ultimately extended.

The county council has provided maternity homes at Ashbourne and Ripley, and has contracted with the Chesterfield Corporation for the use of four beds at the Chesterfield maternity home. During the last financial year 67 cases were admitted to the Ashbourne home at a net cost to the county of £335, whilst 124 cases were admitted to the Ripley home at a cost of £429. At the request of the Ministry of Agriculture samples of water from the rivers Trent, Derwent, and Erewash were taken for analysis on July 16th. The samples of the two former were satisfactory as regards dissolved oxygen, except the Derwent sample taken at Borrowash Bridge. The samples of the Erewash, on the other hand, came out badly. The Erewash is a small stream with numerous factories and sewage works in its winding course, and its gradient is slight. In these circumstances the stream becomes a series of sedimentation tanks washed out with each flush of storm water. There is no sign of fish life until near its junction with the Trent.

As Derbyshire is a large milk-producing county clean milk competitions are promoted wherever possible. A prize fund is organised, with subscriptions from various public bodies, private individuals, and big milk buyers. Surprise samples are taken of each competitor's milk and tested for dirt, for the presence of *B. coli*, and for rapidity of souring. Up to the present the large number of competitors has prevented bacteriological counts, tubercle inoculation tests, and examinations of the cows and cow-sheds, but it is hoped shortly to include all these procedures. At the show in connexion with each contest an exhibit shows the results of the tests; the creditable exhibits are labelled with the names of the competitors, the discreditable bear numbers only. After the Tuberculosis Order came into force on Sept. 1st, 1925, energetic action was taken to weed out advanced tuberculosis from the herds. Thus during the last four months of the year 553 cows were slaughtered, of which 454 had advanced tuberculosis and 91 had tuberculosis not so advanced. Dr. Ash emphasises the importance of having the cow-sheds disinfected after the removal of the tuberculous cows, and the farmers are recommended to adopt a system of disinfection similar to that advocated by Dr. W. G. Savage, of Somerset. The samples of milk taken under the Tuberculosis Order are tested by direct microscopic examination and by animal inoculation if the former is negative. Of 66 samples so examined 6 were found positive by direct examination and 5 by the inoculation test. In the ordinary examination of mixed milk samples for tubercle bacilli 28 out of 300 samples gave a positive result (9·3 per cent.).

The death-rate from cancer has been almost stationary in the county during the past ten years. Dr. Ash thinks that everyone knows the need for early operation, and that the reason why cases do not come to the surgeon early is because the condition is frequently symptomless. Propaganda has taught everyone that a lump in the breast may be cancer, but has not dispelled the fear of the knife,

and Dr. Ash cannot see how that is going to be done by lectures or pamphlets. The patient's own doctor is the right person to do it. At the same time maternity and child welfare centres are suitable places from which to spread knowledge of the seriousness of bleeding about the time of the menopause.

The number of known cases of encephalitis lethargica was 43, as compared with 84 in the previous year. Dr. Ash hopes that the provinces will follow the example of the Metropolitan Asylums Board, which has provided accommodation for 100 London children suffering from the after-effects of this disease. He is sanguine about the prospects of immunisation against scarlet fever, diphtheria, and measles.

Bretby Hall Orthopædic Hospital has just been completed for the reception of 50 cases of tuberculosis of bones and joints in children, and Dr. Ash thinks it should also be used for the accommodation of children crippled by non-tuberculous causes. He considers that the attitude of the public towards cripples in the past has been one of apathy, and that few people have tried to understand their problem. The first point is that a very large proportion of the cases of severe crippling could have been ameliorated if not entirely cured. The second is that only about 10 per cent. of cripples need be excluded from an ordinary competitive life if they are properly looked after and properly trained. The cripple wants to be able to live as normal a life as possible. The herding of cripples is degrading to them and stimulates a variety of objectionable public sympathy. It is well to remember, says Dr. Ash, that a defect such as the loss of a leg or arm is no bar to such sports or games as golf, tennis, swimming, motoring, and cycling. The need for higher education for cripples is pressing. All brain work, clerical work, private secretaryships, and domestic service can be quite well performed by cripples. On a recent visit to two large well-known hospitals for cripples Dr. Ash found no cripples employed on the staff. If this is the attitude of such institutions the general public will hardly be likely to employ them, and they will be allowed "to drift into the soul-destroying employments that have alone been open to them in the past."

Hampshire.

Dr. Robert A. Lyster states that it is becoming increasingly obvious that the combination of official public health work with general practice is to the detriment of both. There are two ways, he says, in which a whole-time officer, free from practice, can be secured by any health authority. Either a number of small health authorities may join to form a combined district, or any health authority may adopt the scheme of the Hampshire County Council and appoint as its medical officer an experienced member of the county staff. Since this second scheme was instituted 5 out of the 22 rural districts and 1 of the 16 urban districts have adopted it.

The county council has made arrangements for the reception of maternity cases by six institutions situated in various parts of the county. The growth in the number of maternity and child welfare centres has been very rapid. At the end of 1916 there were five such centres. At the present time there are 80 in the administrative area, all run on voluntary lines. There are 550 voluntary workers associated with the scheme, and it is estimated that two-tenths of the time of the ten assistant county medical officers is taken up with this work. Dr. Lyster considers that, owing to the demand for more centres and the offers of further voluntary help, it would be justifiable to increase the county medical staff in order to allocate the equivalent of the services of four whole-time medical officers to this work. Arrangements have been made with eye hospitals or departments at Southampton, Salisbury, Bournemouth, and Portsmouth for the admission of mother and child in cases of ophthalmia neonatorum. In order to save delay Dr. Lyster thinks this disease should be notified direct to the county medical officer of health. It has been found that some midwives are reluctant to call in medical aid in these cases, and the Ministry has advised that local supervisory authorities might refrain from exercising their power of recovery of the fee in this class of case, so that nothing shall stand in the way of the midwife seeking prompt medical aid. The whole question of the recovery of fees from the relatives for medical help called in by the midwife has been considered by the county council, and as a result an insurance scheme has been adopted. Under this scheme the expectant mother who engages a midwife may pay 5*s.* to the county medical officer. In return for this payment the county council will pay the fees of the medical man who may need to be called to the assistance of the midwife.

In certain areas in the county the nurses of district nursing associations have acted as school nurses, tuberculosis nurses, and health visitors. This arrangement has been found to have serious disadvantages and is now only in operation in a few parishes. The supervision of the midwives in the county is carried out by the superintendent of the County Nurses Association under the direction of the county medical officer, and a payment is made by the county council for these services.

Dr. Lyster is of opinion that notifications of tuberculosis should be made direct to the county council, the authority responsible for treating the disease. The Ministry of Health suggested that with a view to closer coöperation boards of guardians should appoint the tuberculosis officers as consultants to their institutions. Ten boards of guardians in Hampshire expressed their willingness to coöperate in the way suggested, but 11 did not see the necessity for the proposal. A comparison of the quinquennium 1921–25 with 1909–13 shows a considerable fall in the tuberculosis death-rate. Thus in the rural districts the rate from pulmonary tuberculosis has fallen from 0·71 to 0·62 per 1000, and the rate from all tuberculosis from 0·92 to 0·79; whilst in the urban district the rate from pulmonary has fallen from 0·75 to 0·68, and the rate from all forms from 0·99 to 0·85. Dr. Lyster thinks that it would be a good thing if the mental deficiency work were centred in the medical officer's department, instead of being divided, as at present, between the offices of the clerk, the medical officer, and a voluntary society. He suggests that it would be easy for him to obtain the assistance of many voluntary workers as for maternity and child welfare work.

Dr. Lyster expresses very decided opinions in favour of sterilisation in dealing with mental deficiency and in favour of the use of prophylactic outfits for the prevention of venereal disease, issued with "clear and concise instructions."

East Sussex.

Dr. A. G. R. Foulerton reports that during 1925 185 houses were provided under housing schemes and 1297 by private enterprise, and that about 694 houses were in course of construction at the close of the year. During the last five years the number of fully trained midwives has increased from 134 to 140, while the number of "bona fide" midwives has fallen from 20 to 5. Midwives attended 1805 of the births, and sent for medical aid in 211 cases before the child was born, and in 191 other cases, either for the mother or baby, after the confinement. In 513 further cases the midwife was engaged as a maternity nurse, a medical practitioner being present at the confinement. The total births numbered 3526. Arrangements have been made for the admission of maternity cases to institutions at Brighton, Crowborough, and Tunbridge Wells. Of the 59 cases thus admitted 17 were cases of difficult labour, 25 were cases in which antenatal observation had detected abnormalities, and 17 were admitted on account of unfavourable home conditions. At the close of the year there were 31 maternity and child welfare centres. The scheme for the coördination of the

county council's health nursing work with that of the East Sussex Nursing Federation continues to work very well. In parishes where there is no district nurse the five district nursing superintendents of the Federation carry out the routine visiting of infants and children under 5 years of age. The district superintendents also supervise the infant visiting work of the district nurses, give talks on infant care, &c., at the centres, and supervise the work of the 186 midwives practising in the county area. They also pay special visits to cases of ophthalmia neonatorum and give assistance in the medical inspection of school-children and at the tuberculosis dispensaries. Sixteen cases of encephalitis lethargica were notified, and there were ten deaths from this cause. At the close of the year the council was looking after 187 mentally defective persons, 67 of these being maintained either in certified institutions or approved workhouses, 13 under guardianship, and 107 under supervision in their own homes. The county council subsidises the East Sussex Voluntary Association for the Blind. Altogether 300 blind persons have been registered, and good progress has been made in providing for the more pressing needs of the necessitous blind in the county. The County Education Committee has provided education in special schools for all blind persons under the age of 16 who need it, and has also provided secondary or technical education for blind persons over the age of 16 who are likely to benefit.

Two interesting charts show the decline in the infant mortality and in the death-rate from pulmonary tuberculosis during recent years. Thus the infant mortality chart shows a steady decline from 100 at the beginning of the century to the present rate of 44, while the pulmonary tuberculosis rate shows a decline from 0·8 in 1909, interrupted by an increase during the war years, to the present figure of 0·6.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED SEPT. 25TH, 1926.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 121 (last week 120); scarlet fever, 1628; diphtheria, 1023; enteric fever, 103; pneumonia, 471; puerperal fever, 49; cerebro-spinal fever, 3; acute poliomyelitis, 41; acute polio-encephalitis, 3; encephalitis lethargica, 36; trench fever, 1; dysentery, 21; ophthalmia neonatorum, 115. There were no cases of cholera, plague, or typhus fever notified during the week. The reported cases of poliomyelitis have notably abated. The large majority of small-pox notifications come as before from the county of Durham.

Deaths.—In the aggregate of great towns, including London, there were no deaths from small-pox, 3 (0) from enteric fever, 1 (0) from measles, 3 (1) from scarlet fever, 27 (5) from whooping-cough, 29 (7) from diphtheria, 239 (58) from diarrhœa and enteritis under 2 years, and 23 (7) from influenza. The figures in parentheses are those for London itself. Since the issue of this return a death from small-pox has been returned from Willesden. A woman of 43 was infected from her husband lately returned from Paris, and died in the small-pox hospital at Kingsbury of a virulent form of the disease.

NEW SWANSEA HOSPITALS.—The foundation-stone was laid at Swansea last week of a new isolation hospital which will accommodate 118 patients and an administrative staff of about 40, at a cost of £80,000. On the same day took place the opening ceremony of a new maternity hospital containing two wards of five beds each and an isolation ward.

MANOR HOUSE ORTHOPÆDIC HOSPITAL. — This hospital at Golders Green has been presented with a sunray lamp department and a motor ambulance by the London General Omnibus Company's Employees' Friendly Society. The hospital, which is under the control of the Industrial Orthopædic Society, is stated to be the only institution of this kind managed and supported entirely by working men.

Correspondence.

"Audi alteram partem."

REFORM IN MIDWIFERY

To the Editor of THE LANCET.

SIR,—I unite with Prof. Theobald in the hope that midwifery practice in this country should be an example to the world. When he states that our official statistics are dreadful, every conscientious obstetrician will agree with him, but can he show me a country where they are as good? The Rotunda Hospital occupies a very small part of Ireland. The population of London alone is greater than the whole of Ireland. Are the catastrophes in Ireland less numerous than they are in London?

Prof. Theobald makes the startling statement: "There is one solution to the problem which *has not been given a fair trial* and that is an *improvement in the teaching of midwifery.*" (The italics are mine.) Had he been interested in obstetrics as long as I have, he would know that the teaching of our subject has improved out of all recognition during the past 20 years. He suggests that we should have several hospitals of the improved Rotunda type. They would need to be much improved to better the hospital conditions we already have. Every important city in England has its Rotunda. London is simply teeming with its Rotundas, of greater or smaller size. Each has its teachers who cannot be surpassed either as teachers or as clinicians. Herein the student is taught the importance of Epsom salts as a preventive of eclampsia. He is taught ad nauseam that 95 per cent. of women can and do deliver themselves. He learns that forceps extraction is a rarer operation than is appendicectomy in a surgical unit; and, above all, he is taught that in a lying-in clinic not more often than some half-dozen times in the year is it necessary to apply the forceps until the fœtal head can actually be seen at the vaginal orifice. These lessons the student takes with him into his practice; he never forgets them; but for reasons I shall mention later he is unable always to carry them out.

Let me touch as briefly as I can upon the practice of midwifery as the student sees it in hospital to-day. In the first place, he sees antenatal care—the very key to obstetrics. Here I join issue with Prof. Theobald when he says: "The antenatal clinics, with all their potentialities for good, may, in fact, be a source of danger, for they have made possible an enormous amount of meddlesome operative midwifery." Is he adverse to version in breech presentations? Does he deprecate our habit of examining a woman under an anæsthetic when we have the slightest doubt as to whether slight disproportion be present or not? Is he in favour of the scandalous practice of allowing a woman to have a trial labour and, this failing, to perform Cæsarean section? My point is that we should *know for certain* long before a woman goes into labour whether her baby will pass naturally through her pelvis or not. This knowledge can only be gained in the antenatal clinic, and when the student has grasped its importance, he has learnt volumes of midwifery. I should refer to this practice as precautionary rather than meddlesome.

Prof. Theobald is evidently a strong advocate of rectal examinations during labour. I had hoped that this ghost had been laid long ago. But even a student might well ask, if it is dangerous and unnecessary to examine per vaginam, where is the need to attack the rectum? Vaginal examinations should always be made twice during labour. First, when the membranes rupture to make sure that the cord has not prolapsed—a very important point, for I have seen this accident in several primiparous women with the head deep in the pelvis. And again, when the second stage has exceeded two hours in order to exclude persistent occipito-posterior presentation.

We cannot determine per abdomen if the occiput has rotated backwards. Per rectum we are able to feel sutures and fontanelles; but to rely on sutures and fontanelles to determine the exact position of the head is simply asking for trouble. We can be certain of a persistent occipito-posterior presentation only in one way, and that is by locating the ear. I have never been able to locate an ear per rectum.

I am not surprised that Prof. Theobald has discarded his Garden-of-Eden method of delivery, for its results are horrible. I have little greater praise for his modified Garden-of-Eden method with its 21 per cent. of perineal tears in primiparous women. Let me beg Prof. Theobald to try once more with properly directed support to the perineum. If he is then still dissatisfied, let him take a series of 100 primiparæ, and let him in each lift the head off the perineum with forceps under deep anæsthesia. His diminished percentage of tears will amaze him, and his morbidity will not be perceptibly increased; whilst at the same time he will be taking a golden opportunity of demonstrating to students what an essentially delicate operation a forceps extraction should be.

Finally, the tone of his communication leads me to suppose that he has had little, if any, experience of private practice, either specialist or general. Without it he cannot hope to trace the source of our trouble to rock bottom. With such experience we can well cease to wonder why so many catastrophes are admitted to hospital, and begin wondering why such catastrophes are not more numerous. The private doctor is driven from pillar to post by the patient's relatives. He receives an urgent summons, and on arrival he finds that the patient has been in labour for barely half an hour. On the staircase he trips over the husband who is seated there with his head between his knees, groaning and unshaven. In the bedroom he will be confronted by the mother-in-law who wants to know when something will be done. There, too, he will meet the woman from next door who is pouring scent on the victim's forehead and saturating the room with noxious vapours. He finally runs up against the patient's own mother who has come up from the country especially for the confinement, and who, having had children herself, of course "understands things." Under such circumstances is it to be wondered at that sometimes we do things contrary to our better judgment and contrary to what we teach and have been taught? No, Sir, the fault does not lie in our teaching. It is not altogether to be found in our hospital system, inadequate as this may be for our needs. The *fault is to be found in the patient's home*, and it matters not whether that home be rich or poor, in this country or in any other. I personally see no reason to hope for any marked improvement in our statistics until we have legislation rendering it illegal for a woman to be confined in the bosom of her family.

I am, Sir, yours faithfully,

ANDREW MCALLISTER.

Wimpole-street, W., Sept. 30th, 1926.

To the Editor of THE LANCET.

SIR,—Whilst appreciating the basic truth of Prof. Theobald's argument, that the results of midwifery in this country are bad, I think there is a possible danger in the general application of his conclusion that we must go back to the "Garden of Eden" method of delivery. It is true, Prof. Theobald states, that the solution of the problem "lies in a return to Nature and to better midwifery"; but the underlying notion is that a "return to Nature" should be the main factor. But Nature is a fickle mistress; she acts blindly, irrespective of consequences. From her point of view, if an individual dies or becomes pathologic, it does not matter; if a race is wiped out, she is unconcerned.

In innumerable diseases, Nature if left to herself leads to annihilation of the individual; Art comes in, and by opposing Nature, frequently prevents such disaster. I instance simply appendicitis; what can be more natural than this disease? It is true that if left to himself, the patient frequently recovers, but even in that case is not always continuously happy. In many other cases, non-interference results in speedy death of the patient. Can, then, we trust Nature in appendicitis, in pneumonia, in typhoid fever? Can the wet packs, the cooling of the body, by artful man—opposing Nature—be disregarded? Are, then, these diseases not natural? How, then, in pregnancy and parturition can the individual be left without concern to Nature?

Prof. Theobald, apart from the immediate deaths, assigns to bad midwifery two results: one is the result of sepsis, the other of trauma. He minimises the possibility of endogenous infection. He has tried in vain "to discover an authentic case of fatal sepsis that occurred in a woman who had never been vaginally examined." "The vast majority of morbid cases are made morbid by infection introduced from without." That may be true, but instances are not rare of some infection occurring without any vaginal examination. A patient of my own, unexamined by myself or by the attending nurse, developed on the tenth day a white leg. The child was born before my arrival, and the nurse I could trust. But plegmasia alba dolens, presumably, is due to infection. Prof. Theobald lays no stress on the effect of coitus late in pregnancy, supposed by some to assist delivery. Nor does he refer to the genesis of a subsequent prolapse after precipitate labour. The disabilities ensuing on parturition are not all due to sepsis, there is frequently left a weakness of the abdominal wall or a laceration of the pelvic floor musculature. To these he does not specifically refer, but the patients so affected form perhaps the greatest number of the patients attending the gynæcological out-patient departments of our hospitals.

Reform in midwifery certainly is necessary, but improvement will not occur by leaving the parturient woman to Nature. Reform will only ensue with the rise of a "better midwifery"; and a better midwifery will only result when a fuller, a more complete understanding of the "normal" becomes known. I am, Sir, yours faithfully,

Rugby, Oct. 1st, 1926. R. H. PARAMORE.

POST-OPERATIVE TETANUS.

To the Editor of THE LANCET.

SIR,—After reading Dr. Dyke's article in the issue of Sept. 18th on post-operative tetanus with identification of the organism, I think it may be of interest to mention a somewhat similar case which occurred at the Royal Free Hospital this year.

The patient was a married woman aged 40, on whom a straightforward myomectomy was performed on March 30th. She had a normal convalescence until April 12th, when she complained of slight stiffness in the jaw on the right side. She had a carious tooth on that side and the symptoms were thought to be due to it until next day when the jaw became more stiff and later in the evening a definite spasmodic attack occurred. She then showed a risus sardonicus but rigidity of muscles was confined to those of the head and neck only. She was immediately given intravenous and intrathecal antitetanic serum and sedatives, but became comatose and died early in the morning of April 14th. On post-mortem examination offensive puriform fluid was found in the uterine wound from which the bacillus of tetanus was isolated. There were also present necroses in the liver and an acute tubular nephritis.

The case is interesting because, as with the patient mentioned by Dr. Dyke, there were so few symptoms—in fact only one spasmodic attack, and the patient died shortly after their onset. I am indebted to Prof. L. McIlroy and Prof. J. H. Dible for permission to write about this case.

I am, Sir, yours faithfully,

M. SALMOND,

Gynæcological Registrar, Royal Free Hospital.

Sept. 29th, 1926.

THE PASTEURISATION OF MILK.

To the Editor of THE LANCET.

SIR,—I am instructed to write to you on the following matter.

Dr. S. G. Moore, Medical Officer of Health, Huddersfield, in his letter on the pasteurisation of milk which appeared in your issue of Sept. 25th, referred to "Grade A Certified Milk."

As you know, the following grades of milk are sold under licence :—

Certified Milk.
Grade A (Tuberculin-tested) Milk.
Grade A Milk.
Grade A Pasteurised Milk.
Pasteurised Milk.

Certified Milk is the highest grade of raw milk while Grade A Milk is the lowest grade of raw milk recognised by the Ministry of Health.

Misquotations of this kind are very confusing to the public and a great drawback to the movement generally.

I am, Sir, yours faithfully,

H. E. MILES,
Secretary, The Certified Milk Producers' Association.

London, Sept. 30th, 1926.

SCOTLAND AND VENEREAL DISEASE.

To the Editor of THE LANCET.

SIR,—The excerpt on Syphilis and Gonorrhœa and Associated Diseases with special reference to their Nature and Treatment and the measures adopted in Scotland for their Prevention and Cure (recently reprinted from the 1925 Report of the Scottish Board of Health by H.M. Stationery Office), which was the subject of an article appearing in your issue of Sept. 25th under the heading A Pamphlet on Venereal Diseases, shows an astonishing omission in that prophylaxis is not even mentioned.

This is an interesting and remarkable publication and indicates a temporary local success for the "conspiracy of silence" in regard to the prevention of venereal disease by personal disinfection. Prophylaxis is not even mentioned in relation to syphilis, and as regards gonorrhœa paragraph 27 does not contain the word disinfection but is headed Prophylactic and Abortive Treatment of Gonorrhœa, and commences:—

"The efficacy of the prophylactic treatment of gonorrhœa is scarcely in question provided that the appropriate measures are taken within a short period of exposure to infection with reasonable care and with ordinary intelligence, but (outside the Services) such measures by almost universal consent are regarded as the concern of the individual rather than of the community."

Now Sir Leslie Mackenzie is the leading (and in 1923 was the only) medical member of the Scottish Board of Health, and in view of his published opinions in favour of education in the prevention of venereal disease by personal disinfection the omission of any reference to disinfection is astonishing. In 1922 two papers by Sir Leslie Mackenzie were published by the Scottish Committee of the National Council for Combating Venereal Disease, the first paper containing the following paragraph :—

"It is absurd to say that there is any danger in teaching every person capable of being taught that the venereal diseases are each of them due to a definitely known germ and that as long as the germ lies on the surface it can be destroyed with a mild disinfectant. . . . In teaching these facts we are teaching things so simple that any person can understand enough of them to realise the danger of spreading the diseases, *the easiness of the methods of preventing them*, and the difficulty of curing them once they are acquired."

The Scottish Board of Health was represented amongst the witnesses before the Committee of Inquiry on Venereal Disease, presided over by Lord Trevethin, by Sir Leslie Mackenzie and Dr. T. F. Dewar. Sir Leslie Mackenzie in paragraph 4 of his written evidence stated : "I put special stress on the measures for prevention," and in paragraph 13 said :—

"All instructions as to methods of ablution and self-disinfection should be regarded as an integral part of a course of genital cleanliness generally."

In his cross-examination on this written evidence Sir Leslie Mackenzie, in reply to Question 131, said :—

"My view would be that the balance of opinion would be rather in favour of direct preventive treatment. I look upon this mere matter of immediate self-disinfection as simply part and parcel of the teaching that would cover the method of destroying germs on the surface of the body. Probably the answer in the biggest industrial centres would be favourable to the methods. My opinion is that if it is a sound thing to do, then on general lines we begin to argue about it and the argument might go on for years, but ultimately the committees would adopt that line."

Colonel Fremantle, M.P., then asked (Q. 133): "If the power were given to chemists to put these prophylactics on sale you do not see any difficulty in the Scottish Board of Health issuing or approving instructions to be given away with them?" To which Sir Leslie Mackenzie replied: "No, I do not in the least, but, of course, there I am speaking for myself. I am a member of the Board and that is the view I should express. I am the only medical member of the Board as it happens."

Dr. Dewar, in para. 12 of his written evidence, says: "Disinfectants such as are supplied to soldiers in barracks in Scotland might surely be sold or distributed along with appropriate instructions to the general public. Labels on the bottle and tube and accompanying instructions would make clear the method of use of the disinfectants. The instructions might be such as had received the prior approval of the central or local authority."

In cross-examination Dr. Menzies put the following question : "The objection (to disinfection depôts) is based on moral and not scientific grounds?" to which Dr. Dewar replied : "Yes, that is so," after which Lord Trevethin asked (Q. 33): "They allow their views on morality to overwhelm their views on humanity towards the individual sufferer from a disease which may cause his physical ruin?" to which Dr. Dewar replied : "I think it is because of the failure to appreciate the gravity of the disease. My experience is that since the real facts of the disease (a good picture of the disease in all its evils) have been presented to the population of Scotland they have expressed more or less their willingness to have it scientifically dealt with."

It would appear, therefore, that this latest official publication on venereal disease cannot be taken as representing expert medical opinion on the Scottish Board of Health or the opinion of informed members of the laity in Scotland.

I am, Sir, yours faithfully,

H. WANSEY BAYLY,
Hon. Secretary, Society for the Prevention of Venereal Disease.

Sept. 29th, 1926.

*** In this criticism of the reprint issued by the Scottish Board of Health on Venereal Diseases under Treatment, it is right to direct attention to the sentences dealing with "prophylactic treatment" of gonorrhœa and collating these with the personal opinions of the medical member of the Board and one of their medical officers. But the inference from those sentences is that the Board, if they have considered the matter at all, have not made any public announcement about it and hold that the present position is adequately indicated by the words "such measures by almost universal consent are regarded as the concern of the individual rather than of the community." These are highly generalised words, but as we read the Board's regulations affecting venereal disease it is open to a local authority to submit any proposals for personal prophylaxis, and, if any such proposals had been made, the Board's reply would, no doubt, have been available in a public form. The Scottish branch of the National Council of Social Hygiene carry on propaganda with public funds on the same footing as the Central Council. Attention may be drawn to the fact that the paragraph quoted from deals with "the prophylactic and abortive *treatment* of gonorrhœa," and that, as stated in the opening paragraph of the pamphlet, "the following descriptive summary of methods employed represents the actual practice of the centres now established. It is intended to impress on the public

the enormous importance of early and sustained treatment of venereal disease." The exposition is designed to place before the general practitioner a connected view of the treatment available and to be of use to all concerned in education and propaganda. Such a document, which is expressly confined to the work of the administrative institutions, cannot be criticised because it does not enter into detail on a complicated and difficult question like personal prophylaxis.—ED.L.

HELIOTHERAPY IN PULMONARY TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—Dr. C. B. Heald in his letter last week under the above heading asks whether, in the experience of your readers, the inverse square law is strictly applicable in the case of ultra-violet rays in clinical use. May I draw his attention to my experimental results in this connexion, reported in detail in THE LANCET of August 22nd, 1925 (p. 369). When the source of ultra-violet rays was a mercury lamp the inverse square law did not apply, since it is not a point-source. Calculations based on this law are thus liable to give variable doses, and might account for anomalous results.—I am, Sir, yours faithfully,

P. R. PEACOCK.

Cancer Research Laboratories, Middlesex Hosp., W., Oct. 3rd.

SANATORIUM TREATMENT OF TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—The fact that the presence or absence of tubercle bacilli has not been taken into consideration by Messrs Stocks and Karn in the grouping of the cases robs this investigation of a great deal of its value. Indeed, it introduces a very serious fallacy. Again, as Dr. Walters has pointed out, sanatorium treatment, to be of any permanent value, must be of long duration, certainly at least 12 months. To regard as "sanatorium treated" patients who have been in an institution for 15 days only seems absurd. The cases should be classified as "otherwise treated."

But one must admit that sanatorium treatment, especially if it is of short duration, has little or no effect on the ultimate progress of the cases discharged as improved or quiescent only. In them the mental factor comes into play; the patient loses heart, and with the first set-back he goes downhill rapidly. That is the reason why we prefer to cure one case rather than "patch up" 20, and when institutions are anxious to get "suitable cases" they have this in mind, and not mere statistical considerations as the authors suggest.—I am, Sir, yours faithfully,

Grampian Sanatorium, Kingussie, Oct. 4th. FELIX SAVY.

IS IT COVERING?

To the Editor of THE LANCET.

SIR,—Will you kindly give advice on a matter of medical ethics which may be of interest to others of your readers? A medical practitioner with a diploma entitling him to practise in the British colony in which it is granted, but which is not registrable in Great Britain, takes up a practice in a country where his diploma is registrable and where those on the British Medical Register also may practise. Is there any ethical or legal objection to a man with a registered diploma (in Great Britain) acting as assistant or as partner to the said practitioner? It is obviously needless for names of persons or places to be mentioned, so I sign myself LATITUDO.

*** The essence of covering, as defined in the Warning Notice of the G.M.C., consists in enabling an unqualified or unregistered person to engage in professional practice as if he were qualified or registered. The case related by our correspondent does not seem to come within this category, as both parties are legally entitled to practise under the medical laws of the country.—ED. L.

LONDON MEDICAL EXHIBITION

THIS exhibition opened at the Central Hall, Westminster, London, S.W., on Oct. 4th, and will close to-day (Friday), Oct. 8th, at 6.30 P.M. It is perhaps the largest of the series of exhibitions organised by British and Colonial druggists and the attendance has also been large. We give below a brief account of some of the more prominent stalls.

DRUGS AND PHARMACEUTICAL PREPARATIONS.

ALLEN AND HANBURYS, LTD. (37, Lombard-street, E.C., and 48, Wigmore-street, W.), showed a wide selection of pharmaceutical and dietetic preparations. Among new preparations was an "Acidophilus Culture" which is an improvement on the Acidophilus Jelly, being more stable, and Cellulose Flour for adding "bulk" material to diabetic preparations. Special attention was called to the Azoule Vacuum Extractors designed for taking samples of blood under conditions of sterility, and also to a stable form of sodium tetrabromphenolphthalein for X ray diagnosis of diseases of the gall-bladder. Prominence was also given to a toilet preparation, Odontase, a pleasant non-acid deodorant and germicidal dental cream, having for its basis magnesium hydroxide.—OPPENHEIMER, SON AND CO. (179, Queen Victoria-street, E.C.) exhibited in large variety their Bi-palatinoids and Palatinoids as well as Roboleine, a vitamin preparation, and a selection of various preparations for colloidal therapy.—BURROUGHS WELLCOME AND CO. (Snow Hill Buildings, E.C.). At this stall a wide range of products were exhibited. Grouped alongside photographs of the highly-magnified organisms responsible for certain diseases there were appropriate medicaments for dealing with the disorders, together with a selection of "Soloid" Microscopic Stains. A full range of "Tabloid" Animal Substances was shown, including "Tabloid" Thyroid Gland, "Tabloid" Mixed Glands, and "Tabloid" Parathyroid Gland. Attention was called to the Bismuth Salts of the firm, for which an exceptionally high standard of purity and physical and chemical uniformity is claimed. New drugs are "Avenyl" (a mercurial preparation soluble in hydnocarpus oil) and "Neostam." The former has been evolved for dealing with cases of syphilis complicated with leprosy. "Neostam" Stibamine Glucoside has been found of service in kala-azar, and in other conditions where tartar emetic has hitherto been used.—W. MARTINDALE (10, New Cavendish-street, W.). The following were prominently displayed: Methyl-Aspriodine, a new compound, containing the equivalent of 56·3 per cent. aspirin and 39·7 per cent. iodine, for inunction in rheumatic affections and as a local analgesic. "Auremetine," indicated in amœbic dysentery, being a combination of emetine, auramine, and iodine. "Mercurome," a valuable and potent antiseptic, of value in cystitis, pyelitis, and gonorrhœa. "Aspriodine," a compound combining the therapeutic properties of aspirin and iodine in stable combination, is said to be of value in rheumatic affections and arterio-sclerosis and wherever iodides have proved beneficial, being supplied in cachets or tablets. "Sedasprin" is the bromine analogue of aspriodine.

ENDOCRINES, LTD. (72, Wigmore-street, W.). At this stall there were exhibited a large number of glandular preparations, particular prominence being given to Anabolin and Hepatic Extract. The first-named is in tablet form for administration per os, and has been found active in some 70 per cent. of the cases in which it has been used. Hepatic Extract, which is available in ampoule form for intramuscular injection, is said to have a pr: found influence on blood pressure and it is stated that clinical experience has shown that in the average case of functional high blood pressure the intramuscular injection of 1 c.cm. of the extract results in a reduction of from 30 to 50 mm. during the first day.—G. W. CARNRICK

Co. (Brooks and Warburton, 40/42, Lexington-street, W.) showed wide selection of gland products, and ARMOUR AND CO., LTD. (Queen's House, Kingsway), in addition to a large number of glandular products, showed Digestive Ferments of all kinds, such as Pepsin, Pancreatin, Trypsin, and Surgical Catgut Ligatures, as well as such specialties as Glycerine Extract of Red Bone Marrow, and Elixir of Enzymes —Among the large display of pharmaceutical preparations shown by the ANGLO-FRENCH DRUG CO., LTD. (238A, Gray's Inn-road, W.C.). Adrepatine, a pluriglandular compound for the treatment of hæmorrhoids, and Homovir, a gland compound in tablets for the treatment of impotency and presenility, were particularly noticeable.—BRITISH ORGANOTHERAPY CO., LTD. (22, Golden-square, W.), exhibited a large selection of organotherapeutical products, including Lymphoid Compound and Serum, for functional nervous disorders and degenerative nervous and mental conditions, respectively; Ovamammoid Compound for menstrual disorders and the disturbances of the menopause; Pancreatokinase for diabetes mellitus and glycosuria, and Enterostasin for chronic constipation, auto-intoxication, and similar conditions.—NUJOL LABORATORIES (Albert-street, Camden Town). The products of this firm are Nujol, an intestinal lubricant, Cream of Nujol with agar, designed to overcome the objection of some palates to plain Nujol, and Mistol, which is a balanced combination of menthol, camphor, and eucalyptol with a pure mineral oil. This latter can be used in an atomiser, and has been successfully used in the treatment of nasal catarrh.—SCHERING, LTD. (3, Lloyd's-avenue, E.C.), showed a camphor extracted from turpentine which compares in every respect and particularly in price with the ordinary form of this substance. This firm also exhibited Veramon, sedative and analgesic, which relieves pain without inducing sleep. It is said to be free from toxic or habit-forming effects, and, in most cases, forms a harmless substitute for morphia.—DESHELL LABORATORIES (1–3, Brixton-road, S.W.) showed Petrolagar, a perfect emulsion of medicinal liquid paraffin and agar-agar.

Among the most striking exhibits was that of H. R. NAPP, LTD. (3 and 4, Clement's Inn, W.C.), where definite progress in therapeutic products was shown in several directions. In particular, Saprovitan A and B may be noticed, a vital bacterial protein for intravenous injection, and Obiturin for determining whether death has actually taken place. This production by a colour reaction distinguishes dead from living tissue. Another interesting exhibit by this firm was Normacol, a vegetable intestinal evacuant in granular form. A teaspoonful of this substance on passing into the bowel is said to swell to a bulk equalling the digested débris of 7 lb. of apples and 5 lb. of cauliflower, or 16 lb. of bread.—HOWARDS AND SONS (Ilford). The attractive display of this old-established house received much notice, among the articles particularly prominent being the Standard Æther, the Agotan brand of Phenylcinchoninic Acid, said to be indicated in rheumatism, gout, brachial neuritis, neuralgia, and an absolutely pure aspirin. Many fine chemicals were also shown, while attention was called to Howards' Hydrogen Peroxide, which is stable and has excellent keeping qualities.—GENATOSAN, LTD. (Loughborough, Leicestershire), while displaying their tonic food, Sanatogen and Genasprin, made a particular point of their vaccines for administration by the mouth.—HOFFMANN-LA ROCHE CHEMICAL WORKS, LTD. (7 and 8, Idol-lane, E.C.) showed a full range of various chemical preparations, including "Allonal," allyl-isopropyl-barbiturate of phenyl-dimethyl-dimethylamino-pyrazolon, a new synthetic, non-habit-forming hypnotic and analgesic, intended to relieve pain of all kinds and give sleep. "Omnopon" total opium alkaloids and "Omnopon" combinations. "Omnopon" (Roche) is a soluble opium derivative in which the whole of the opium alkaloids are presented in their naturally occurring proportions but in the form of soluble hydrochlorides. "Isacen," diacetyl-dihydroxyphenyl-isatine, is a tasteless, odourless, non-toxic laxative which is insoluble in water and dilute acids, acts only in an alkaline medium, is not absorbed, and has no action upon the kidneys. — CHAS. ZIMMERMANN AND CO. (9/10, St. Mary-at-Hill, E.C.). Besides calling special attention to Angiolymphe, a non-toxic vegetable composition indicated in tuberculosis as an intramuscular injection, made a special feature of the Dega brand of Lysol guaranteed to contain 50 per cent. cresols. While conforming to old standards in its qualities, this lysol has been considerably reduced in price. Other prominent exhibits of this firm were Idozan which presents iron in a readily assimilable form and does not cause constipation, Posterisan, a new vaccine therapy in the form of an ointment, and suppositories for the treatment of hæmorrhoids and allied conditions.—MENLEY AND JAMES, LTD. (Menley House, 64, Hatton Garden, E.C.), showed a therapeutically active iodine in an emollient base called Iodex, and made prominent Vitaminose, a chlorophyll vitamin compound intended to act as a food adjunct where the accessory food factor has been lost or impaired in preparation, culinary or mechanical.—C. J. HEWLETT AND SON, LTD. (35–42, Charlotte-street, and 83–85, Curtain-road, E.C.), included in their original preparations an antiseptic cream for eczema, abrasions and so forth, and a series of medicated skin lotions, Evapogens and Hormonigen, a combination of pluriglandular extracts for use in endocrine insufficiency.—MAY AND BAKER (Battersea, London, S.W.) called attention to Bistovol, bismuth acetylamino-oxyphenylarsonate, in ampoules of an oily suspension for intramuscular injection. This new preparation is for use in the treatment of syphilis. Sodium salt of N-phenylglycineamide-p-arsonic acid, Tryparsamide, for treatment of sleeping sickness (trypanosomiasis of man and mal de caderas of the horse) is claimed to have produced good results in general paralysis, tabes, and other forms of neurosyphilis. The sodium salt of theobromine-N-acetic acid—a new addition to diuretic medication—Mestarine, possessing marked advantages over theobromine and other derivatives of this compound by reason of its stability and ready solubility, was also exhibited by this firm.—SAVORY AND MOORE, LTD. (143, New Bond-street, W.), made a prominent exhibit of foods for infants and invalids and showed a wide selection of pharmaceutical preparations and drugs.—ANGIER CHEMICAL CO., LTD. (86, Clerkenwell-road, E.C.), exhibited their emulsion, petroleum with hypophosphites.—CROOKES LABORATORIES, BRITISH COLLOIDS, LTD. (22, Chenies-street, E.C.), showed a large selection of their original colloidal preparations and made a prominent feature of Collosol cod-liver oil. This takes the form of a 50 per cent. emulsion prepared with oil obtained from cod caught in home waters, the oil being extracted on board the fishing vessel, thus ensuring perfect freshness of the material. The preparation mixes with water, milk, or wine.—KAYLENE, LTD. (7, Mandeville-place, W.), showed various preparations of Kaylene (Colloidal Kaolin) for the treatment of chronic intestinal stasis, Colonol liquid paraffin possessing high viscosity at the temperature of the body, and a Swedish health bread, Spisbrod, which contains 100 per cent. of whole grain rye, while the DENVER CHEMICAL MANUFACTURING CO. (London, E.) exhibited their well-known antiseptic poultice, Antiphlogistine, which is indicated in deep-seated inflammatory and congestive conditions. —DIMOL LABORATORIES (40, Ludgate Hill, E.C.) demonstrated Dimol as a bactericide both in internal and external use. It is put up as a dentifrice, in the form of a syrup, pastilles, lavage powder, ointment, snuff, and dusting powder. Dimol as a bactericide is claimed to be 35 times more efficient than pure phenol.—BOOTS PURE DRUG COMPANY, LTD. (Nottingham), had a most attractive display of synthetic and medicinal chemicals, compressed tablets of drugs, solutions, surgical dressings, and sundries, and THE SEMPROLIN CO., LTD. (Carmex House, 18, Leather-lane, E.C.), displayed "Semprolin" Emulsion c.

Iodine (⅛ gr. in each fluid ounce), a preparation in which iodine is held in solution with even distribution. —PARKE, DAVIS AND CO. (50, Beak-street, W.) exhibited a new type of bacterial antigens, Immunogens, developed in the medical research laboratories of Parke, Davis and Co., and representing simple antigens almost free from toxin and bacterial cells. Attention was also drawn to Metagen and cod-liver oil emulsion—Metagen supplements the fat-soluble vitamin of cod-liver oil with the water-soluble vitamins of vegetable origin and provides a valuable remedy in cases of impaired nutrition.—NEWTON, CHAMBERS AND CO. (311, Gray's Inn-road) exhibited Izal disinfectant in various forms, and JEYES' SANITARY COMPOUNDS CO., LTD. (64, Cannon-street, E.C.), showed various preparations of Cyllin.

(To be continued.)

A FATAL CASE OF SMALL-POX IN WILLESDEN.

ON Sept. 29th Dr. G. F. Buchan (M.O.H., Willesden) was called in to see two cases (man and wife) by the medical practitioner in attendance. He found the man to be suffering from small-pox in a modified form and the woman to be suffering from hæmorrhagic small-pox. The cases were removed to the Willesden Small-pox Hospital the same day and the clinical features of these cases are described by Dr. A. G. Troup, medical superintendent, as follows :

Mr. M. F., aged 43 years. Vaccinated in infancy. Re-vaccinated in or about 1900.

Condition on admission to Hospital.—There were a few dry scabs on the hands, wrists, and feet, but the large majority of the lesions had completely healed, leaving no scar. It was not possible to differentiate accurately the site of all the pustules, but as far as could be ascertained these were as follows : three on face, a few on scalp, three on shoulders and neck, three on abdomen, two on flanks, four on arms, four on hands, one on right thigh, two on feet (dorsal surface).

The patient walked into the hospital and had nothing to complain of. On Oct. 2nd all scabs had completely disappeared, leaving a small scar in some instances.

Mrs. R. F., aged 44 years. Vaccinated in infancy.

Condition on admission to Hospital.—Temperature 97° F. ; pulse 64. A hæmorrhagic rash was present on the trunk, arms, forearms, thighs, and legs, being most marked in the axillæ, groins, and wrists. The hæmorrhages took the form of petechiæ and ecchymoses, the latter form being chiefly present in the axillæ and groins. A diffuse erythema was present on the trunk and extremities, most marked on the shoulders posteriorly. The face was slightly bloated and there were no hæmorrhages present in this region. The patient had a characteristic fœtor and was quite conscious. The conjunctivæ were injected only. The tongue thickly furred and the mouth dry. Metrorrhagia was present. There were excruciating pains in the back, and the patient was in great distress. There were no papules, vesicles, or pustules present.

A hypodermic of morphia was given and the patient remained quiet for about five hours. She was seen again at 11 P.M. The hæmorrhages on the trunk and extremities had increased in size and number. The face and lips were a livid hue and the former was more markedly bloated. The pulse could not be felt. The patient was very restless and in a semi-conscious condition and died at 11.45 P.M.

Inquiries into the history of these cases showed that Mr. and Mrs. F. had come to London from Paris on Sept. 5th and had gone to a West-central hotel, from which hotel they moved to a West-end hotel on Sept. 7th. On Sept. 8th Mr. F. became ill with pains in the back, headache, severe prostration, and a temperature of 105° F., followed two days later by a rash first appearing on the scalp and face and subsequently on the arms and legs as described above. On Sept. 19th Mr. and Mrs. F. moved to a nursing home in Brondesbury, Kilburn. On Sept. 24th Mrs. F. became ill with severe pains in the back, followed by headache, vomiting, extreme restlessness, and sleeplessness. On Sept. 26th an erythematous rash appeared in the axillæ and groins, subsequently becoming punctate, and on Sept. 29th it was as above described.

Mr. and Mrs. F. were in Paris during the last fortnight in August and apparently it was during the last week of that month that Mr. F. was infected. It is reported that there is small-pox in Paris. Mr. F. had been vaccinated and re-vaccinated and took the disease in a modified form. He apparently infected Mrs. F., who developed small-pox of the virulent type. Mrs. F. had not been vaccinated since infancy.

The medical officers of health of surrounding districts in which the patients had resided or from which the patients had been visited were communicated with. All contacts were traced as far as possible and vaccination advised and the necessary disinfection was carried out. At the West-end hotel the medical officer of health, Dr. Charles Porter, ascertained that one of the staff had been ill for about 36 hours with suspicious symptoms and that another of the staff was ill in Lambeth. Both of these cases have subsequently been notified as small-pox.

The usual period of two days which elapses between the onset of the disease and the appearance of the rash gives an opportunity for preventive measures to be taken, as it enables the patients (deemed non-infectious during this period) to be isolated. All medical practitioners in Willesden have been notified of the circumstances of the occurrence of the disease and are actively coöperating with Dr. Buchan to prevent, as far as may be, any spread. Should no further cases arise Willesden will be free of danger of spread from the patients imported into the district probably about Oct. 13th and certainly by Oct. 20th.

Medical News.

BIOCHEMICAL SOCIETY.—The next meeting of the society is being held in the Biochemical Laboratory, Cambridge, on Saturday, Oct. 9th, at 2.45 P.M.

HARVEIAN SOCIETY.—A clinical meeting of the Harveian Society of London will be held at St. Mary's Hospital, Praed-street, London, W., on Thursday, Oct. 14th. Cases at 8 P.M. ; chair to be taken at 8.30 P.M.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following demonstrations of specimens in the Museum will be given at 5 P.M. in the theatre of the College in Lincoln's Inn-fields. On Oct. 15th Sir Arthur Keith will show specimens of surgical and anatomical interest recently added to the Museum. On Oct. 22nd he will demonstrate the anatomy of the sacro-iliac region and its application to practice, and on Oct. 29th specimens illustrating disorders in the growth of bone. On Oct. 18th Mr. C. E. Shattock will demonstrate surgical conditions of lymphatic glands, and on Oct. 25th surgical conditions of blood-vessels, and on Nov. 1st scrotal tumours. The demonstrations are open to advanced students and medical practitioners.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Thursday, Oct. 14th, at 5 P.M., in the lecture room of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., Sir Thomas Horder will give the opening lecture of a series on Emergencies in Medicine and Surgery. On Friday, Oct. 15th, at 5 P.M., at the Royal Westminster Ophthalmic Hospital, Mr. M. L. Hine will give a lecture-demonstration on the Red Eye and the Significance of Circumcorneal Injection. Both lecture and demonstration are open to members of the medical profession without fee. An intensive three weeks' course in laryngology, rhinology, and otology is in progress at the Central London Throat, Nose and Ear Hospital. Beginning on Oct. 18th there will be a combined course in Diseases of Children in which the Paddington Green, the Victoria Hospital, and the Children's Clinic are participating ; this will include morning and afternoon sessions. On the same day a course in gynæcology starts at the Chelsea Hospital for Women, and an afternoon course in urology at St. Peter's Hospital, where there will be clinical work in the out-patient department, including cystoscopies, as well as daily lectures. A course of eight lecture-demonstrations is being given throughout the month at the London School of Tropical Medicine. Copies of all syllabuses, of the General Course programme, and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship, at 1, Wimpole-street, London, W. 1.

HOSPITAL DINNERS.—The annual Old Students' Dinner was held in the Great Hall of *St. Bartholomew's Hospital* on Oct. 1st, when Mr. W. 1. Holmes Spicer presided over a large gathering. In proposing "The Hospital and Medical College" Mr. Spicer reviewed the doings of a year, in which the most important occurrence was the completion of the Queen Mary block of buildings for the housing of the nursing staff. The next most urgent work in prospect was the provision of an operating theatre block in connexion with the new surgical building, in order to avoid the perilous journey across the square of patients from ward to operating room and back. The provision of a department for paying patients was under consideration, for, said Mr. Spicer, even the most wealthy will soon not be able to command the best treatment elsewhere. During the year 120 students had obtained qualification to practise and the same number had joined the Medical College. The severe loss of Prof. Lovatt Evans from the College was a gain to University College, where he now occupied the Jodrell Chair of Physiology. The midwifery department was shortly to have a whole-time resident assistant physician-accoucheur; this appointment and the research laboratory attached to the new department in memory of Dr. Herbert Williamson raised the hope of forming at some future time a professional unit in the University of London. The biggest scheme in prospect was the removal of the school buildings to the other side of Giltspur-street at an estimated cost of £140,000. Lord Stanmore, who responded, added that it was hoped next year to begin to build a residential college, without which no medical school could remain efficient and progressive. Sir Percival Hartley proposed "Our Guests" in a speech full of apposite allusions, response being made by Sir William Beveridge, Vice-Chancellor of London University, who warmly acknowledged the great part played by the medical schools in the life of London University, while contending that a university still had functions as such to perform. The evening terminated with a racy speech from Dr. Owen Lankester, who proposed "The Chairman."

The annual dinner of the *St. George's Hospital Medical School* was held at the Hyde Park Hotel, Knightsbridge, S.W., on Oct. 1st, when Captain the Right Hon. C. C. Craig, M.P., Parliamentary Secretary to the Ministry of Pensions, presided over a large gathering. The dinner was arranged at separate tables so that friends could be sure of proximity, and there were only two speeches on the programme, one from the Chairman, a member of the house committee of the hospital, and one from Dr. Anthony Feiling, the Dean of the school, in reply. Captain Craig said that he spoke as a junior member of the important committee managing the domestic affairs of the hospital, and he testified to the spirit of keenness and loyalty which prevailed among all with whom he came into contact, while he considered that the exploits in the athletic world of the comparatively small school were particularly gratifying because they were accompanied by a high average of success in examinations. The Dean commenced by recording the retirement from the active staff of two of its most prominent members, Mr. H. S. Pendlebury, who no longer was residing in London, and Dr. Cyril Ogle, who, although he was now on the consultant staff, retained control over a certain number of beds, through the courtesy of the succeeding senior physician, and was thus able to continue the clinical teaching which so many generations of students had followed. Dr. Feiling said that the school was now full, as it was not considered that adequate accommodation could be found for more than 100 or 110 students, and while he noted that Dr. Graham Little, in his introductory address, had warned them that all medical schools might expect a decrease in entry, he had no apprehensions on this score. He gave the examination results to show the high average level of success in examinations which the students at St. George's had achieved during the past year. In response to allusions made both by Captain Craig and Dr. Feiling, Mr. G C. Dewes, the captain of the cricket eleven, which had secured the inter-hospital cup, spoke amusingly of the failure of statisticians to prophesy success for an eleven from a small school against schools of the size attached to St. Bartholomew's or Guy's; he attributed the good-fortune of his team partly to their keenness and greatly to the generous action of Mrs. Tuke in providing the cricket ground for practice.

St. Mary's Hospital dinner was held at the Connaught Rooms on Oct. 4th, and attracted a large number of past and present students, including many who had been at the post-graduate course held at the hospital during the preceding three days. The Chairman, Dr. G. W. H. French, after referring to the death of Mr. Herbert Page, Mr. Clayton-Greene and other St. Mary's men, went on to speak of the affairs of the hospital and medical school, and commended the new appeal by which it is hoped to equip two new operating theatres, increase the number of beds, and improve the accommodation for nurses. He quoted examination results in which 54 per cent. of St. Mary's students had been successful, as compared with 29 per cent. of all the students entering; from this he deduced that the present students were working as hard as they were playing. Mr. A. R. Prideaux, chairman of the Hospital Board, said that it had caused the Board much anxiety that the hospital should have had to turn away urgent cases. The 44 new beds which they hoped to provide would enable them to reserve some for emergencies. The King Edward Hospital Fund had offered the hospital £4000 on condition that another £20,000 was raised before the end of the year. The hospital's reply had been to raise £20,000 in five weeks, the extra cost of this appeal being not more than £150. Efforts were being made to secure additional land beside the hospital for purposes of extension. Dr. C. M. Wilson, Dean of the Medical School, said that the entry of students at medical schools always increased after a war. In 1919–20 the entry at St. Mary's had risen to 45, just as it rose after the South African War. In 1921, however, it had fallen again to 31, and this return to pre-war level seemed to mark a crisis in the school's affairs, especially as expenses nowadays were four times as great as formerly. Clinical units had been started and during the past year the entry at St. Mary's had risen again to 45, whereas in other schools it had fallen. On the previous Saturday, he was glad to report, three Rugby fifteens had taken the field. Sir William Willcox, in proposing the toast of "The Chairman," said that no better man could be found to represent the general practitioner, who was the backbone of the profession and reached a higher general level in this than in any other country.

The annual dinner of past and present students and friends of the *Middlesex Hospital* was held at the Savoy Hotel on Oct. 1st. The Chairman, Mr. Victor Bonney, spoke of the new annexe of the hospital, which is now in full working order and is enabling the institution to carry on during the process of rebuilding with only a small diminution in the full numbers of beds for in-patients. Having referred in felicitous terms to the work done for the hospital and school by Sir Henry Morris, Sir Richard Douglas Powell, and Mr. Stephen Paget, whose deaths have saddened the past year, the speaker dwelt on the great schemes in progress. The site for the new Institute of Biochemistry is now clear, and it is hoped that the next 12 months will see the completion of this building, which the Middlesex owes to the generosity of Mr. Samuel A. Courtauld. Replying to the toast of "The Middlesex Hospital and Medical School," Mr. Courtauld alluded to his personal experience of the enormous importance of true scientific research in industry, and expressed his certitude that the selection and support of capable biochemical workers would lead to important advances in medical knowledge. Mr. Eric Pearce Gould, Dean of the Medical School, referred to the generosity of the old medical students of the school who have contributed more than £1000 towards the reconstruction fund. Sir Walter Fletcher, responding to the toast of "The Guests," expressed the admiration which he, as secretary of the Medical Research Council, felt for the constant output of valuable work from the research departments of the hospital. It was, he said, a pleasure to afford as much help as possible to an institution so admirably equipped and organised.

The annual dinner of *Westminster Hospital* students was held at the Royal Adelaide Gallery on Oct. 1st. The Chairman, Mr. William Turner, won applause by an announcement that he would not encourage long speeches, and the evening's entertainment was chiefly musical, the songs and recitations chosen being variously appropriate to the ages of the audience. In a short statement on the position of the medical school, the Dean, Dr. A. S. Woodwark, expressed himself as more than satisfied with its progress. The entry of students during the past year had been higher than during the previous 25, and he was confident that the numbers would increase still further. In this, its ninety-third year, the school was going ahead in every direction. That its facilities were being appreciated was evident from the fact that the War Office had chosen it as the place of post-graduate instruction for officers of the Royal Army Medical Corps, and there was no doubt that students would be attracted by the equipment of new laboratories, made possible by the John Burford Carlill Endowment; these had recently been opened by the Vice-Chancellor of the University of London. Dr. Coombes and Mr. R. Greene replied to the Chairman's toast of "Past and Present Students," Dr. Coombes recalling the days when visitors came and paid 1s. at the porter's lodge because they mistook the hospital for the Royal Aquarium. Dr. Brittan Gill proposed the Chairman's health and he briefly responded.

MEDICAL FREEMAN OF ANDOVER.—At a special meeting of the Andover Town Council on Oct. 1st the Honorary Freedom of the Borough was conferred upon Dr. E. A. Farr in recognition of his services as Mayor for three successive years and of the part he has taken in bringing to a successful issue the scheme for the new War Memorial Hospital, of which he is senior medical officer.

ROYAL DENTAL HOSPITAL OF LONDON: *School of Dental Surgery.*—The scholarships, prizes, and certificates awarded during the past academic year were presented on Oct. 4th by Sir Humphry Rolleston at the hospital. Mr. H. Stobie, the Dean, said that the number of students and pupils in the school is at present 135. Examination results for the year were as follows: Of 95 candidates for finals 53 passed; of 50 candidates for mechanics 37 passed; the corresponding figures for metallurgy being 47 and 33 and for dental anatomy 93 and 69. Sir Humphry Rolleston delivered an address on the Relation of Dental and General Hospital Schools. Discussing the desirability of union of dental and general hospital schools, he said that there were good reasons in favour of their close association. From the point of view of the patients there was much to be gained by consultation and an obvious advantage was the provision of beds for patients undergoing extensive extractions and operations on the jaws. In the interests of the progress of dental science correlation with other departments was important, and again the value to dental students of seeing the medical and surgical complications of dental disease was incalculable. The introduction of a compulsory medical qualification for all dentists was not practical politics at present, though it might be in the future. Meanwhile the more progressive institutions for the training of dentists were likely to ally themselves with general medical schools. For this reason Sir Humphry Rolleston suggested that the Royal Dental Hospital would also sooner or later be driven to unite with a general teaching hospital. Doctors would naturally send their sons and daughters who intend to take up dentistry to the dental schools attached to their old teaching hospitals, and dentists educated at dental schools which had remained in splendid isolation would sooner or later follow suit. This possibility was worthy of serious consideration. The recent amalgamation of the Rugby football clubs of the Royal Dental and Charing Cross Hospitals might be prophetic. Mr. Norman G. Bennett moved a vote of thanks to the speaker.

EDINBURGH ROYAL INFIRMARY.—On Oct. 9th the new radiological department is to be opened by the Duke of York.

ROYAL SOCIETY OF MEDICINE.—As we have already announced, the annual dinner of this society will be held on Thursday, Nov. 18th, at 7.30 for 8 P.M., at the Hotel Victoria, Northumberland-avenue, when the Prime Minister has consented to be the society's guest of honour if his duties permit. Those who desire to be present are asked to apply on the proper form at an early date, particularly as it may become necessary to limit the number of private guests. No places can be reserved after Nov. 11th.

ROYAL SANITARY INSTITUTE.—A sessional meeting will be held at the Town Hall, Dover, on Friday, Oct. 22nd, at 7.30 P.M., when Prof. H. R. Kenwood will take the chair at discussions on Diphtheria Immunisation (Dr. Joseph Cates and Major F. E. Roberts, R.A.M.C.) and Port Sanitary Administration (Dr. A. B. McMaster). Visits to local places of interest and a reception by the mayor have been arranged for the afternoon. Those proposing to attend should notify Dr. McMaster, at Brook House, Dover, by Oct. 15th.

CHELSEA CLINICAL SOCIETY.—The annual dinner of this society will be held at the Cafe Royal, Regent-street, on Tuesday, Oct. 26th, at 7 for 7.30 P.M., Dr. Ernest Young in the chair. Amongst those who hope to be present are Lord Carson, the Dean of St. Paul's, and Sir Arthur Conan-Doyle. Members are invited to bring guests, and application for tickets should be made to Mr. A. R. Thompson, 45, Queen Anne-street, W. 1. Further arrangements for the session include discussions on Encephalitis Lethargica on Nov. 16th, and Septicæmia on Dec. 21st.

MEDICAL SOCIETY OF LONDON.—The programme of the first half of the next session of this society has now been issued. The annual general meeting will be held on Monday, Oct. 11th, at 8 P.M., after which the Fothergillian Medal will be presented to Sir Gowland Hopkins, F.R.S., and the annual oration will be delivered by Sir Berkeley Moynihan on Before and After Operation. Amongst other arrangements are a clinical evening on Oct. 25th at 8 P.M., and discussions on Sternal Pain (Dr. John Parkinson and Mr. A. J. Walton, Nov. 8th, 8.30 P.M.), on the Treatment and Diagnosis of Bronchiectasis (Dr. Clive Riviere and Mr. J. E. Roberts, Nov. 22nd, 8.30 P.M.), and on the Exanthemata (Dr. J. D. Rolleston and Dr. R. A. O'Brien, Dec. 13th, 8.30 P.M.). The Lloyd Roberts lecture will be delivered on Friday, Nov. 19th, at 5 P.M., at the Royal College of Physicians by Dean Inge, whilst the Lettsomian lectures are arranged for Monday, Feb. 21st, and Wednesday, March 9th, at 9 P.M., the subject being the Surgery of the Spinal Cord and Membranes, and the lecturer Mr. Donald J. Armour.

EUGENICS EDUCATION SOCIETY.—This society has changed its address to 20, Grosvenor-gardens, London, S.W. 1; Tel.: Sloane 2086.

WEST LONDON HOSPITAL CHAPEL.—By the generosity of Mr. Dan Mason a chapel has been added to this hospital. It is dedicated to St. Michael and All Angels, and has just been consecrated by the Bishop of Kensington.

VICTORIA UNIVERSITY OF MANCHESTER.—The following candidates have been successful in the undermentioned parts of the examination for the Diploma in Public Health. Part I.: Mary Evans; Part II.: John Rigby and H. M. Turner.

GLASGOW CHILD WELFARE CENTRE.—On Oct. 5th Major Walter Elliot, Under-Secretary of State for Scotland and Vice-President of the Scottish Board of Health, opened a new child welfare centre in Springburn, Glasgow. This is a new unit in the large Glasgow scheme for child welfare.

BRUSSELS UNIVERSITY MEDICAL GRADUATES' ASSOCIATION.—This association, which was formed 46 years ago in order to safeguard the interests of all medical graduates of the University of Brussels, will hold its annual dinner on Oct. 28th at the Langham Hotel, Langham-place, London, W., at 7.30 P.M. Any graduates in this country who have not received a notice of the dinner or a recently published list of members and rules of the association, are asked to communicate with the hon. secretary, Dr. A. D. Woolf, at 11, Chandos-street, Cavendish-square, London, W. 1.

MEDICAL TOUR OF THE FRENCH RIVIERA.—The Société Médicale du Littoral Méditerranéen has organised a visit of doctors from different countries to the French Riviera, in order to acquaint them with the therapeutic resources of this region. The tour will take place between Dec. 15th and 24th, and will include visits to Hyères, St. Raphael, Cannes, Grasse, Venice, Nice, Beaulieu, Mentone, Monte Carlo, and Monaco. The programme and full particulars can be had from the Office Français du Tourisme, 56, Haymarket, London, S.W.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, Oct. 11th.—5 P.M., WAR. Presidential Address: Group-Captain Henry Cooper, R.A.F.: The Wider Aspect of Service Medical Work.

TUESDAY.—5 P.M., THERAPEUTICS AND PHARMACOLOGY. Presidential Address: Dr. George Graham: The Treatment of Gout.

THURSDAY.—8.30 P.M., NEUROLOGY. Presidential Address: Sir James Purves-Stewart: Intracranial Tumours and Errors in their Diagnosis.

FRIDAY.—8 P.M., OBSTETRICS AND GYNÆCOLOGY. Specimens: Prof. Louise McIlroy: (1) a Case of Bilateral Malignant Disease of the Ovary in a Girl of 18; (2) a Case of Endometrioma of the Ovary. Presidential Address by Dr. Archibald Donald. Paper: Mr. Victor Bonney: The Outcome of 214 Radical Abdominal Operations for Carcinoma of the Cervix Performed Five or more Years Ago. The paper will be discussed by Dr. Lockyer, Prof. Fletcher Shaw, Mr. Rivett, Mr. Gray, and others. —8.30 P.M., ELECTRO-THERAPEUTICS. Presidential Address: Dr. G. B. Batten.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY, Oct. 11th.—8 P.M., Annual General Meeting. 8.45 P.M., Presentation of the Fothergillian Gold Medal to Prof. Sir Gowland Hopkins. 9 P.M., Sir Berkeley Moynihan: Annual Oration, "Before and After Operation." Conversazione.

SOCIETY FOR THE STUDY OF INEBRIETY (Rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, London, W.).

TUESDAY, Oct. 12th.—4 P.M., Dr. J. D. Rolleston: Alcoholism in Classical Antiquity.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, Oct. 11th, to SATURDAY, Oct. 16th.—FELLOWSHIP OF MEDICINE (Special Lecture), Medical Society of London, 11, Chandos-street, Cavendish-square, W., Thurs., Oct. 14th, 5 P.M., Sir Thomas Horder on Some Emergencies in General Medicine.—ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, Charing Cross, W.C. Special demonstration on The Red Eye and the

Significance of Circumcorneal Injection by Mr. M. L. Hine on Friday, Oct. 15th, at 5 P.M. The lecture and demonstration are free to members of the profession.—CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL, Gray's Inn-road, W.C., Intensive course in Clinical Laryngology, Rhinology, and Otology. Operative class also.—LONDON SCHOOL OF TROPICAL MEDICINE, Endsleigh-gardens, N.W. Tues. and Thurs., 2 P.M., clinical demonstration. Further information from the Secretary of the Fellowship of Medicine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY, Oct. 11th.—2 P.M., Special Demonstration of Medical Cases in the Wards: Dr. A. J. Whiting. 2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.
TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.
WEDNESDAY.—2.30 P.M. to 5 P.M., Medical Skin and Eye Clinics; Operations.
THURSDAY.—2 P.M., Special Demonstration of Surgical Cases: Mr. H. W. Carson. 2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose, and Throat Clinics. Operations.
FRIDAY.—2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.

POST-GRADUATE HOSTEL, Imperial Hotel, Russell-square, W.C.
TUESDAY, Oct. 12th.—9 P.M., Mr. J. P. Lockhart-Mummery: The Prognosis of Rectal Cancer.
THURSDAY.—9 P.M., Mr. R. E. Elmslie: Internal Derangement of the Knee-joint.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Oct. 12th.—5 P.M., Dr. S. E. Dore: Physiology of the Skin.
THURSDAY, Oct. 14th.—5 P.M., Dr. J. M. H. MacLeod: Morphology and Histopathology of Elementary Lesions.

NATIONAL HOSPITAL, Queen-square, Bloomsbury, W.C.
MONDAY, Oct. 11th.—2 P.M., Dr. Hinds Howell: Out-patient Clinic. 3.30 P.M., Dr. Adie: Disseminated Sclerosis.
TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Bernard Hart: The Psychoneuroses.
THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Dr. Martin: Epilepsy.
FRIDAY.—2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Dr. Symonds: The Pathogenesis and Treatment of Cerebral Vascular Disease.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street.
THURSDAY, Oct. 14th.—4 P.M., Dr. Nabarro: Meningitis in Children.

ST. MARGARET'S HOSPITAL FOR WOMEN, Acomb-street Whitworth Park, Manchester.
WEDNESDAY, Oct. 13th.—4 P.M., Dr. H. R. Clarke: Pitfalls in Medical Practice.

ANCOATS HOSPITAL POST-GRADUATE COURSE.
THURSDAY, Oct. 14th.—4.15 P.M., Mr. Harry Platt: Treatment of Common Injuries.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, Oct. 12th.—4.15 P.M., Dr. W. Fletcher Shaw: Chronic Pain in the Lower Abdomen.
FRIDAY.—4.15 P.M., Prof. J. Kay Jamieson: Lymphatic System in Relation to Cancer.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.
TUESDAY, Oct. 12th.—4 P.M., Prof. MacWilliam: High Blood Pressure from the Physiological Aspect. Discussion to be opened by Prof. Herring.

Appointments.

GRANT, J. W. GEARY, F.R.C.S. Eng., has been appointed Honorary Surgeon to the Cardiff Royal Infirmary.
JOE, A., M.D. Edin., D.P.H., Medical Superintendent, North-Western Hospital, Hampstead.
PAGE, C. MAX, M.B., M.S. Lond., F.R.C.S. Eng., Consulting Surgeon; and RUSSELL, H. B., M.D. Lond., Deputy Physician.
Certifying Surgeons under the Factory and Workshop Acts: LOGIE, J. M., M.B., C.M. Glasg. (Burntisland, Fife); YOUNG, J., M.B., Ch.B. Glasg. (Ormskirk, Lancaster).
Scotland Yard: CASSIDY, M.A., M.D. Camb., F.R.C.P. Lond., Physician and Chief Medical Officer.

Vacancies.

For further information refer to the advertisement columns.
Barbados General Hospital.—Senior Res. S. £300.
Belfast, Queen's University.—J. C. White Lectureship in Bacteriology. £600.
Bethlem Hospital, Lambeth-road, S.E.—Non.-Res. H.P. £25 per quarter.
Birmingham, Queen's Hospital.—Asst. Obstet. Officer. £50.
Bloomsbury Dispensary, 12, Bloomsbury-street, W.C.—Surg. 100 guineas.
Bristol Mental Hospital, Fishponds.—Third Asst. M.O. £350.
Bristol Royal Infirmary.—Hon. Gynæcological Reg., Hon. Ophth. Reg., and Asst. Anæsthetist.
Cambridge, Addenbrooke's Hospital.—H.P. At rate of £130.
Cardiff, Royal Infirmary.—Hon. Asst. S.
Chichester, West Sussex County Mental Hospital.—Med. Supt. £900.
Croydon County Borough.—Asst. M.O. £600.
Derbyshire Royal Infirmary, Derby.—Two H.S.'s and Asst. H.S. and Cas. O. Each at rate of £150.
East London Hospital for Children and Disp. for Women, Shadwell, E.—Res. M.O. £200. H.P. and Cas. O. At rate of £125.
Gloucestershire Royal Infirmary and Eye Institution, Gloucester.—Sen. H.S. At rate of £175.
Guildford, Royal Surrey County Hospital.—H.S. £150.
Hampstead General and North-West London Hospital, Haverstock-hill, N.W.—H.P. and Cas. M.O. Each at rate of £100.
Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—Pathologist, &c. £750. Also H.P. £50 for six months.
Leeds, St. James' Hospital, Beckett-street.—Chief M.O. £1000
Manchester, St. Mary's Hospital.—Two H.S.'s. Each at rate of £50.
Metropolitan Hospital, Kingsland-road, E.—Sen. H.P., Sen. H.S., Jun. H.P., Jun. H.S., and two Cas. O.'s. All at rate of £100.
Middlesex Hospital, W.—Phys. and Asst. Phys.
Nordrach-on-Mendip Sanatorium.—A.M.O.
Otago Hospital Board, Dunedin, N.Z.—Med. Supt. £1000.
Otago University and Dunedin Hospital, New Zealand.—Medical Tutor and Sen. Res. M.O. Also Sen. Res. Surg. O. Each £400.
Portsmouth Royal Hospital.—Third H.S. and Cas. O. At rate of £150 and £100 respectively.
Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—Cas. O. At rate of £100.
Royal Chest Hospital, City-road, E.C.—Res. M.O. At rate of £150. H.P. At rate of £100, and Anæsthetist. 10 guineas.
Royal National Orthopædic Hospital, 234, Great Portland-street, W. Surg. Reg. 100 guineas.
Royal Northern Hospital, Holloway, N.—H.S. and H.P. Each at rate of £70.
Salisbury General Infirmary.—H.S. £150.
Staffordshire General Infirmary, Stafford.—H.S. At rate of £200.
Victoria Hospital for Children, Tite-street, Chelsea, S.W.—Cas. O. and Reg. £150.
Walsall General Hospital.—Sen. H.S. and Jun. H.S. At rate of £200 and £125 respectively.
West End Hospital for Nervous Diseases, Welbeck-street, W.—Hon. Reg.
The Chief Inspector of Factories announces a vacant appointment for a certifying Factory Surgeon at Tunbridge Wells (Kent).

Births, Marriages, and Deaths.

BIRTHS.

DAVIES.—On Sept. 27th, at The Gables, Chipping Campden, Glos., the wife of Dr. J. C. Davies, of a daughter.
SIMPSON.—On Oct. 2nd, the wife of J. Watson Simpson, M.B., Ch.B., D.P.H., of Snitterfield, near Stratford-on-Avon, of a daughter.

MARRIAGES.

DENNEHY—MANSON.—On Sept. 23rd, at St. Edmund's Church, Bury St. Edmunds, Dr. John J. Dennehy, to Blanche Veronica Vivian Manson, daughter of the late Captain E. E. M. D. Manson, South Lancs Regt., and of Mrs. Manson, of North-gate, Bury St. Edmunds.
RANNIE—BROOKE.—On Oct. 2nd, at Holy Trinity, Sloane-street, S.W., James Rannie, M.D., to Mary Elaine (Molly), elder daughter of Mr. and Mrs. Norman Brooke, of Sidmouth, Devon.
SLATER—HOWE.—On Wednesday, Sept. 29th, at Rochester Cathedral, John McDonald S. Slater, M.B., F.R.C.S. Edin., elder son of Mr. and Mrs. W. H. Slater, of Murrayfield, Edinburgh, to Dorothy Rose, only daughter of Mr. and Mrs. T. E. Howe, of "The Clearing," Maidstone-road, Chatham.
STUBBS—HINTON.—On Sept. 30th, at St. Michael's Church, Shepton Beauchamp, Somerset, Major John William Cotter Stubbs, D.S.O., M.C., R.A.M.C., to Mabel, eldest daughter of the late Lieut.-Colonel C. B. Hinton, C.M.G., Royal Artillery, and of Mrs. Hinton.
WILSON—REES.—On Sept. 28th, at Roupell Park Church, S.W., Archibald Wilson, O.B.E., M.C., M.B., Ch.B., to Gwendolen, youngest daughter of the late Rev. Allen Rees, LL.D., of Ipswich, and Mrs. Rees, Streatham Hill, S.W.

DEATHS.

BALL.—On Oct. 2nd, at Stert-street, Abingdon, Berks, James Barry Ball, M.D., F.R.C.P., aged 77.
BARNETT.—On Oct. 2nd, at Hilgrove-road, South Hampstead, Lawrence Barnett, M.D.
EWART.—On Sept. 29th, at his residence, North-street, Chichester, David Ewart, M.D., F.R.C.S. Edin., O.B.E.
KING-LEWIS.—On Sept. 29th, at St. Lawrence, Jersey, James King-Lewis, M.R.C.S., L.S.A., formerly of Westbury, Salop, aged 65.
MORROW.—On Oct. 2nd, at the Middlesex Hospital, of acute lymphatic leucæmia, David Morrow, M.R.C.S., L.R.C.P., L.S.A., of Harley-street, W.
PERRIN.—On Oct. 3rd, at Temple-square, Aylesbury, Thomas Perrin, M.D., M.S. Lond., F.R.C.S. Eng.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

THE NERVOUS CHILD

Being an Abstract of Lectures given at the Teachers' Vacation Course at Bingley, Yorkshire, on August 9th and 10th, 1926,

BY MILLAIS CULPIN, M.D. LOND., F.R.C.S. ENG.
LECTURER ON PSYCHONEUROSES, LONDON HOSPITAL MEDICAL COLLEGE.

AN important point of view is involved in the title of these lectures. Nerves are things that we can see and handle, can put on a plate or under a microscope, and disease of them is called nervous disease; but the word "nervous" in this title is used in a totally different sense—a sense which Dr. Johnson, in a letter to Mrs. Thrale, described as incorrect. The usage of years has not made it more correct, but the misuse is so established that we must accept it, whilst bearing in mind that it involves not only inaccuracy but, to some extent, a wrong attitude.

We take for granted that man knows little of what goes on inside his body and is not responsible for such internal happenings, but we have assumed that we know all that takes place in our minds, and we cannot admit that our thoughts or feelings or emotional reactions are not wittingly determined by ourselves. Hence, when these processes are disturbed we maintain our assumption by placing the disturbances in the category of bodily events, and advertisements of patent medicines "for the nerves" indicate the commercial possibilities of the belief that to be nervous means to have one's nerves physically deranged. But there is a dim suspicion that all is not so simple; to be highly strung is almost commendable, to have a nervous breakdown or suffer from neurasthenia is pardonable, but by some subtlety of etymology to be neurotic involves moral censure. In these conditions we know nothing of any change in nerve tissue, though hypotheses which soon lead into the deep sea of metaphysics are common enough. The word nervous survives in the sense used in the title because it avoids, not metaphysics, but the admission that we are dealing with a problem not of body but of mind.

Perhaps the admission hurts our pride. Each one of us, nervous or not, likes to feel "I am the captain of my soul." But another reason for avoiding it is the difficulty of the problems thus created. As long as the nervous patient, his friends, and his doctor can meet the situation by a rest-cure or something to be taken three times a day—well, the situation is being met and no difficult problems are raised. Although a medical woman recently published a paper showing that one-fourth of all long illnesses amongst school-teachers fall into the group of "nervous breakdowns," and although a similar proportion exists in other occupations, yet no medical student at his qualifying examination expects to be asked about these disorders. If the problem of nervous troubles is thus avoided you may understand my diffidence in approaching that part of it—the nervous child—which contains the core of its difficulties.

What is Nervousness?

Whilst not assuming an antithesis between body and mind, I must indicate what appears to be our attitude to these conceptions. We picture the body as a set of mechanisms—bones, muscles, nerves, glands, and other tissues—which we can study in detail. But when we consider the behaviour of the individual we note various thoughts, feelings, and desires which we recognise in ourselves and assume in others. These processes we conceive as mind, though you will soon see that this conception must be enlarged. In a nervous person we must assume an impulse or inhibition that leads to behaviour ill-fitting to the situation; we often note, also, an unduly emotional state. Moreover, we may make a grievous error if we assume that the cause of the impulse, of the inhibition, or the emotion is known to the subject.

Mal-adapted behaviour and an apparently uncalled-for emotion are, then, characteristic of nervousness.

The Physical Side.

There are well-known bodily concomitants of emotion. Take, for example, that of fear. The pale face, rapid pulse, and altered breathing, the dry mouth, the tremor or immobility indicate a disturbance of bodily processes, and there are less obvious changes in the secretions of internal organs. A good deal can be said for the Lange-James theory that our perception of all these changes constitutes what we feel and describe as emotion.

But we are too ready to consider emotion as an acute experience. In the child who suffers from a continued state of apprehension there may be a general physical ill-being with digestive or circulatory troubles, loss of appetite, poor sleep, and such like. The resulting inability to cope with current difficulties sets up a vicious circle which demands attention both to the mental and the physical state.

The nervous parent has nervous children, not by heredity but by infection. Yet there is an inborn temperament related to physical development and especially to the development of certain glands. To take extremes as examples we know the cretin, stunted in mental and physical growth, who reacts in a marvellous way to the administration of extracts of the missing thyroid gland. Disease of the pituitary gland may lead to obesity and mental retardation, and other glandular disturbances may lead to premature or delayed sexual development. There is, within normal limits, a wide range of temperamental differences, and if any individual becomes nervous the kind of nervous reaction will be determined by his temperament.

Nervousness can produce physical symptoms, but the sequence may be mistaken, so that the nervousness is regarded as caused by the physical trouble. Bodily troubles *can* initiate nervous symptoms, but I regard that process as a setting free of possibilities already present. Sleepy sickness is followed by nervous symptoms and even serious delinquency, and in this disease there are actual changes in the brain, but, since all the symptoms are known apart from any brain change, their appearance may be regarded as the result of the removal of the control of the higher centres, which allows potential troubles to become manifest. A general malaise, like that induced by infected tonsils, may cause a child to give way to tendencies which better health would enable him to control. I am, however, sceptical about errors of refraction producing nervous symptoms. Defective sight may have an indirect influence, but I regard eyestrain as a bogy, and the only justification for condemning a child to wear glasses is the fact that he cannot see properly without them.

A continued state of apprehension can produce circulatory changes as shown by cold and discoloured hands, rapid fatigue, and in adolescents by faintings, breathlessness, and other symptoms that lead to the suspicion of heart weakness. Loss of appetite with nausea or actual vomiting can also arise. What is cause and what effect may be a difficult and important question. The symptoms, arising from a difficulty of adjustment, may be used as a means of escaping that difficulty and thereby become perpetuated. The *aim* of a neurosis, at any age, is often obvious to the outsider but hidden from those closely concerned with the patient. Even a mental symptom like night terrors serves the purpose of enforcing the presence of a loved person. Everyone may not find it easy to imagine night terrors maintained by such an aim, but I present the idea as a possibility.

There is a relation between an emotional state and posture. Note the child who stands with drooped shoulders, excessively curved lumbar spine, and protruding abdomen, and perhaps shows the faint blueness of the hands that marks a poor circulation. That child finds life's burdens heavy, is over-dependent, and often querulous. The stance is, I believe, the precursor of a condition found in the nervous adult and associated with a sagging of the abdominal contents which leads to diagnoses of movable kidney, dropped stomach, and the like.

Dietetic dislikes carry a good deal of emotion and are linked with bodily reactions. Though I would not advise forcing upon the child an article of diet which arouses repugnance, yet such dislikes should be discouraged; moreover, an adult who takes pride in his or her—it is generally her—dietary idiosyncrasies probably has other idiosyncrasies which make her unsuitable for a position in which children may find example and influence.

Squint, stammering, and left-handedness are related. They occur in families and a "cure" of left-handedness is often followed by a stammer. Stammer is recognised as a nervous sign, squint has been noted to occur in children of unstable disposition, but left-handedness has been regarded as a manifestation of original sin—in the child, that is—for the left-handed adult has been welcome in the team since the time when among the children of Benjamin "there were seven hundred chosen men left-handed; every one could sling stones at a hair's breadth and not miss." The left-hander is in general self-assured, obstinate in a quiet way, yet not given to futile opposition, and has a desire for justice for himself and others; he goes his own road with as little fuss as possible. Whether this results from the left-handedness or whether the left-handedness is adopted as a symbol of independence, I do not venture to say. Apart from scriptural authority, we have an inkling of the traits of the left-hander. In choosing as a companion in a tight corner between a stammerer, a squinter, and a left-hander most people would choose the last. For an example of grim determination I commend the biblical story of Ehud, "a man left-handed."

The familial occurrence of the three affections indicates differing reactions to parental authority or even to family

tradition. A left-handed father may be so kindly, calmly, and persistently obstinate that reaction in the children is inevitable.

Theory of the Unconscious.

This theory is essential to the understanding of nervous reactions, and we may approach it by looking at a phenomenon which, because it is universal, we accept as not calling for explanation. This is the loss of memory, or amnesia, for our early years. We say that we were too young to remember, but the memory of a child of 3 can easily go back for a year or more. The child has no defect of memory; it is we who are too old to remember.

There is a well-known saying attributed to Ignatius Loyola: "Give me the child to the age of 7 and I care not who has him afterwards." The foundations of character are laid in those early years, and all of us are influenced by mental processes once conscious, but now inaccessible to ordinary introspection. What has happened to those memories? We might regard character traits as determined by particular combinations of nerve elements and the continued use of certain nerve paths. This is a simple hypothesis, but it is not helpful except so far as it offers an explanation of training. Let us take an example. A girl of 10 breaks out into unreasonable anger on being denied any trivial thing, but quickly recovers and offers whatever atonement is within her power. Plainly a neurotic reaction. The parents, set to trace its first appearance, recall that at the suckling stage the maternal supply was deficient and the baby did not thrive. She always turned away from the breast with an outbreak of angry crying, and when put on artificial food repeated the action at the end of each feed, though by all the canons of child-rearing she had had enough. This reaction has persisted in unbroken sequence to the age of 10 and may become a permanent character trait. One might call it a conditioned reflex and speculate about nerve paths and nerve patterns. But, knowing how we blot out early memories, what support have we for denying that memory in some form independent of words has been at work throughout the history just given? Unless we suppose a radical discontinuity a change from reflex mechanism in the nursing child to a different world of memory a few months later, it seems reasonable that there was some mental link between the first reaction and those that occurred later, a link of the nature of memory.

Now let us make a fresh start from another direction. Doctors who treated men suffering from those mental breakdowns called shell-shock found in them losses of memory for emotional events, chiefly of war; these losses could be restored, and the restoration aided in the removal of symptoms which often symbolised in curious ways the incidents forgotten. Sometimes there were discovered losses of memory going back to the time of childhood.

These observations could best be summarised by the theory of the unconscious, first practically employed by Freud in regard to psycho-analysis. His early methods resembled those employed in reviving war memories, and experience of war cases has led to further work which has compelled many of us, almost against our will, to accept Freud's ideas to a greater or less degree. Chief among them is the conception of infantile memories which, with many later additions, remain in the *unconscious*, not as inert impressions but as a source of impulse and emotion that govern our likes and dislikes throughout life. Now you can see how the problem of the nervous child is the core of the problem of nervousness.

In this the emotional relationship of the child to the parents is an important element. It is in many respects composed of opposites—the desire to remain the child and to grow up, to obey and to disobey, to be dominant and to be submissive; these are further complicated by the fact that repression into the unconscious is constantly taking place. With growth the attitude to the parent is transferred to other objects and many mishaps may occur. Lack of affection may lead to a "sour grape" feeling towards the world at large, and a common type of nervous adult is one incapable of giving affection and, therefore, of receiving it, the situation being met by some of the many ways in which the nervous patient can use the neurosis to tyrannise over the personal environment. Too great an attachment can be as disastrous. Everyone is familiar with the mother's darling, and from my war experience I concluded that he generally suffered from shell-shock. A certain amount of "standing up to" the father is a developmental necessity, and the mother's darling escaping this need fails to stand up to anything. The same result may follow the influence of a drunken, bullying, or overpowering father.

Sex Instruction.

We must return to the fact that fear is important in the nervousness of the child, and here it has required the courage of the psycho-analysts to speak plainly of one source of that fear. They are accused of emphasising sex; but our reactions to that emphasis are so emotional as to remove themselves from the intellectual sphere and take their place among the results of unconscious influences which, in this case, are easily traced. The taboo against mention of sex has been mitigated of late years, but it still falls with full force upon the child, just as it fell upon us in our impressionable amnesic years with the result that we have accepted it as unquestionable.

Not only is the child assumed to have no knowledge of sex and reproduction, but knowledge must at all costs be withheld. The result is within the experience of many of us. There is set up a barrier behind which the child builds up a mass of speculation and distorted actuality, whilst we on the adult side of the barrier pretend that nothing is happening. Any sign the child may show of interest or knowledge is met with an emotional disapproval which quickly repairs any breach. What nervous development takes place behind the barrier depends upon the temperament of the child.

Here let me digress and briefly sketch temperamental types. Two extremes have always been known, the doer and the thinker, and these Jung calls the introvert and extrovert. The extrovert is in close contact with the world—he *feels* himself in contact and gives it no thought. Easily adjusted to his environment, he accepts the current view, has no doubts about the truth of his beliefs—though he can easily alter them—and, conforming to the social standard, is free from embarrassment or fear of criticism. The introvert has to make contact by thinking, he finds adjustment an effort, is critical of current views and his own, and tends to be overscrupulous and fearful of what people may think of him.

Their reactions to the taboo are quite different. The extrovert child will accept the situation, will find pleasure in the search for illicit knowledge, will enjoy the nasty jest, and, generally speaking, will come through unharmed. And on reaching adult life he will again adjust to the social standard and resolutely withhold information from his offspring.

The introvert cannot accept the taboo without thought; he decides—as far as he can decide—that, since the omniscient parents head him off with prevarications or untruths, there must be something dreadful in this knowledge, and something dreadful might happen if he pried into it. Hence he will turn a deaf ear to the talk of his fellows; he turns a deaf ear, but the talk sinks into the unconscious to plague him with a sense of sin. The impulse of curiosity is strong and he is compelled to build up phantasies about the mystery; these phantasies likewise are repressed with any knowledge he may have gained. And when he becomes a parent he will know that his children should be better instructed; but he will not have the courage to instruct them, for the introvert at any age has his fears stimulated by the sex taboo. (I think we are justified in using this designation. A taboo in its original or South Sea Island sense was essentially irrational and was supported by public opinion, whilst its violation was expected to bring about the most direful social results.)

How secretive behaviour can influence the child may be illustrated by an experience of my own, which I have recorded elsewhere,[1] as follows:—

> A girl of six, usually truthful, lost a playmate by death; the parents, for reasons which seemed good to them, withheld this information, but friends discussed it before her in hushed voices in the trustful idea that she would not understand. Then a pet animal of hers died and, looking at the dead body, she said to her father: "Isn't it strange that when an animal dies it's here, but when a human dies it isn't here?" The father guessed that she was speculating about the death of her young friend and decided that she must be told the truth. Her mother gave her the news, which was met with a burst of tears and "She can't be dead, mummy, she was too young." But after a minute's thought she repeated the same words about the dead animal—to her mother, of course, this time. The father, confirmed in his suspicion, asked her later if she knew of the death of her playmate before her mother told her. This question was met with "Of course I didn't, how could I? Why do you ask me?" and the father's attempt to explain why he asked only brought forth more denials. It would have been impossible to discover what fantastic ideas about death were present in the mind of the child, who, recognising that knowledge of a mysterious happening was hidden from her, retired into her own world and refused to part with its secrets. The analysis of adults, however, shows that such incidents form the constituents of unconscious phantasies which may attain great importance in later life.

Let us consider what was imposed upon this child. When the death was discussed she was obliged to act the lie of not understanding, and in doing that she had to keep considerable emotion in check. Then she had to defend herself against the implication of having acted several lies, and did it by telling fresh ones. In regard to the sex taboo many—indeed, most—children are under the necessity of maintaining a similar false standard of thought and action, though we must remember that all is not on the plane of full consciousness. Moreover, when the parent is the owner of knowledge

[1] The Nervous Patient. Lewis and Co. Pp. 28.

which must not be sought, and which the child is yet impelled to seek, the fear of the forbidden becomes displaced upon the parent. This may explain those cases in which a parent free from any trace of harshness is, nevertheless, an object of the child's fear or timidity.

It may be said that I am beating the air, that the modern parent agrees that the child should be saved from the pitfalls of ignorance. There are, indeed, books with such titles as "What a boy of 12 ought to know," and it has been proposed that upon school-teachers should fall the task of instruction. But before the taboo is crowned by an initiation ceremony does anyone try to find out what the boy of 12 really knows? To try is to fail. "Give me the child to the age of 7" said Loyola, and for more than seven years the boy—and all this applies, of course, to the girl as well—has been influenced by false ideas and false values. The matter is not one of knowledge versus ignorance, but of the emotion with which the subject is invested. Those, for instance, who feel that they would not dare to discuss this subject before other people as I am doing had better avoid any attempt to deal with the problem in the child until they have dealt with their own; then they may find that there is no problem except within themselves.

There is no difficulty in stating conventions and having them accepted. That certain subjects are not spoken of in general talk is a proposition that needs no emotional emphasis, and the principle of avoiding such emphasis should be widely applied. The more emotional we make a prohibition the more we drive into the unconscious whatever tendency there may be to violate that prohibition, and what is driven into the unconscious is placed beyond conscious control. Take, for example, our emotional attitude to swear-words. No one goes through life without hearing them, and in adult neurotics words regarded as obscene often thrust themselves into consciousness as obsessive thoughts. Or consider the delight the small child takes in strutting about naked; I think that delight is a matter of observation. Suffered for a time, it soon meets with the taboo against exposure, enforced with unexplained emotional emphasis. One result is the dream most of us have experienced of being insufficiently clothed in public, a dream often of nightmare intensity. Another result is the persistence in the unconscious of a tendency to expose the body or to play Peeping Tom with the opposite of extreme modesty in consciousness. Incidents caused by the out-cropping of this unconscious tendency are, unfortunately, common and often have serious effects upon young people, effects which are in direct proportion to the emotional emphasis placed upon the prohibition.

The period of infantile amnesia is occupied largely by the enforcement of social prohibitions. Please do not credit me with attacking these—they have to be accepted. But whilst enforcing them as "things that are not done" we can avoid the attitude of the savage towards those who would violate the tribal taboo. That attitude is not felt to be necessary in matters of great difficulty. The habit of wiping muddy boots upon the door-mat, for example, may need disciplinary measures for its cultivation, but, however severe the discipline, we do not invest a lapse with the feelings of horror and awe that we attach to violations of taboo. Hence, however painful may have been the acquirement of the door-mat habit, it rarely serves as a basis for nervous symptoms.

The Masturbation Difficulty.

I should not be doing my duty if I avoided the subject of masturbation. A physician monk named Tissot once wrote a volume in which many physical ills were ascribed to this practice, and his statements have been copied through the centuries, whilst only of late years have physicians had the courage to admit that we know of no physical ills that result from it. It does not produce insanity or consumption, nor does it per se induce the nervous troubles we are concerned with. It is so common that the race would be in a bad way if a tithe of the evils ascribed to it really existed. Great remorse is frequently felt often associated with persistence of the habit, and on account of the many superstitions about it the sufferer who seeks help is likely to have that remorse intensified. At the risk of incurring censure I will state plainly that when I have to deal with this remorse my first advice takes the form of "Don't worry, most people have gone through it," for the removal of the remorse is the best road to the dropping of the habit. The ill-effect lies first and foremost in the guilt feeling, then in the fact that it is a most selfish action and turns inwards mental energies that ought to flow outwards. Moreover, the psychic trends that may be established in connexion with it—in the shape of perverted phantasies and the like—may stand in the way of a healthy mental attitude in later life; but the phantasies are not caused by the habit, though they become linked with it.

I have seen cases in which preventive measures have been disastrous. One of a young man whose serious neurosis hung upon his being trussed up at night in a weird instrument designed to prevent the habit; another in a girl who could not learn, though her intelligence was good. At my only interview with her she quickly told her story, with the pathetic excuse "I only do it when I am nervy." But her mother watched her day and night in her efforts to stop the habit, to which she attributed the troubles really caused by her own treatment of the situation.

The impulse to the act may be successfully controlled; when repressed and denied conscious recognition it may show itself (as described by Maurice Healy in his book "Mental Conflict and Misconduct") in delinquencies like truancy, kleptomania, and such a bizarre symptom as the impulse to leap into an unattended cart and drive away.

The Handling of the Nervous Child.

Emotion is infective, and the fussy parent or teacher can easily induce fear in the child; in fact, almost any neurotic symptom can be passed on. A lack of affection, whether real or only fancied, can lead to the "sour grapes" feeling which makes the child reject all attempts at friendly relations. Truculence and outbreaks of temper have to be checked, but if we have grasped the conception that the child may not be aware of the *why* of his own reactions we shall not resort to retributive punishment but rather avoid the stimuli that produce them and make as easy as possible the passing of the storm. But please do not assume that a belief in unconscious motivation means the rejection of measures that encourage the child to behave as he should. Impulses not consistent with the demands of reality should be overcome, whatever their origin. We all have them.

School life, by removing the child from the surroundings in which nervousness has arisen, is often the best for him, and for an only child the rough and tumble of school life is a necessity. Faults in emotional development are likely to crowd upon him. The neurotic demands that a child makes upon the parent can rarely be fulfilled at school, and these demands show themselves in extraordinary guise. I know an only child who was a model of obedience in circumstances when obedience might have been difficult. But her constipation was the plague of her mother's life. At last she went to boarding school, taking with her a packet of senna leaves which were to be handed over to the school authorities with full directions for their administration. The leaves were burnt and the child's intestinal functions were left to look after themselves, which they did quite efficiently. The girl doubtlessly derived gratification from the symptom which, by its obstinacy, counterbalanced the obedience she so readily gave in other directions.

But for one type of child the rough and tumble may be most distressing. The school-child is mainly an extrovert—introversion increases with age—and the extreme introvert may have an unhappy time. The extrovert despises the other, who fears and yet envies him. The introvert—fearful, over-conscientious, and subject to all kinds of inhibitions—may fail to adapt to school and retire more and more into his own world. You may remember that about a year ago a boy at a public school committed suicide. The newspaper accounts showed him to be an extreme introvert, and a realisation of his temperamental difficulties by someone in a position to help might have prevented the tragedy.

The introvert teacher may suffer when facing the mass extroversion of his scholars; his doubts and over-scrupulousness will appear as vacillation and fussiness, but insight into himself will help him with the sensitive child when his opposite type might fail.

Whether child or grown-up the sufferer from a pathological fear or inhibition realises the absurdity of it. To laugh at it or force him to face it without sympathy is futile. The only way—short of special treatment—is to recognise it as of real importance, to assure him of that recognition, and then encourage him to carry on in spite of it. One of his character traits is reticence, and yet talking about his symptoms may greatly help to remove them. If you wish to get the confidence of the nervous person, child or adult, you must remember that he is overwhelmed by considerations of moral judgment, and if you show any signs of judging you will stop the flow of confidence.

One need not think the extrovert child escapes nervous troubles, but they are less likely to be complicated by his emotional view of them. He may show apparently isolated symptoms or present educational difficulties in the face of which he shows a cheerful detachment in contrast to the worrying reaction of the other.

I feel that I have left the subject rather in the air by dealing with principles instead of specific difficulties. I might have talked about the obvious, about regular meals, early hours, the avoidance of excitement and overwork, of the sin of frightening a child, and such like. But that was not what I set out to do. Perhaps the most important point I have tried to make is that we adults have to look into ourselves to find the cause of nervousness in the child.

PREVENTION OF VENEREAL DISEASE IN THE FRENCH ARMY.

IN France venereal disease is held by many to be not a subject for public discussion, but the recruit when accepted is given a preliminary pamphlet of information, a second when he is ordered to join his unit, and a third when he arrives in barracks, where, during his service, his officers and N.C.O.'s, and the regimental medical officer, all have chats with him and advise him, at the same time studying him to decide if he will make a good instructor for those who will follow him. Then there are notices in barracks and in the canteen, books in the regimental library, and various moral agencies. Certain police measures protect the recruit; women soliciting in the neighbourhood of barracks or in public-houses are arrested, also those suspected of having infected men. Major H. M. G. Jausion, of Val-de-Grâce, who offers much instructed comment in the *Archives de Médecine Militaires* for July, states that ablution cabinets, as advised in the United States, have been installed in barracks, but they are thought to have made little difference, and reliance is now placed on prophylactic packets of which there is a free issue available in barrack rooms. Men who are attacked are sought out at inspections, they are isolated and treated; uncomplicated gonorrhœas in the regimental infirmaries, those with complications in the urological sections of hospitals, and the syphilitic cases in the special wards of hospitals. Ulcers are not to be kept in regimental infirmaries, not even for making diagnosis sure; it is so important to begin treatment at once that they must be sent forward directly. These men are all taught the essential need for prolonged treatment. The bearing of early treatment on the time when marriage may be allowed is carefully considered in this paper, in which is also mentioned a method of administering arsenobenzol by the mouth. As in other armies, it is allowed that statistical facts about the success of prevention are difficult to secure.

A CONTORTIONIST.

THE trade of the contortionist in this country seems almost to have died out except for occasional street performances, and these are not always exhibitions of true skill and dexterity. On the other hand, there exist a large number of people, acrobats and ordinary folk, who claim to be "double-jointed." What this term means is not altogether clear. In many cases it means that owing to congenital laxity of the capsules or malformation of the articular surfaces certain joints may be partially dislocated at will. Whether this covers all cases of "double joints" and whether the ability can be acquired are some of the questions suggested by the appearance at various halls of entertainment in this country of Mr. Chester A. Kingston, who is an unusually supple contortionist. His father and mother were acrobats and contortionists, and he claims that the amazing pliancy, especially of the spinal column, is due entirely to training in very early life. A slight funnel-shaped depression of his sternum and a definite Harrison's sulcus suggest that possibly there were other factors. Although well over medium height and of a fine degree of muscular development he manages to get into a small box measuring 16 in. by 19¼ in. by 21 in. He also passes himself through hoops and backs of chairs fairly easily. Mr. Kingston was examined by certain members of the French medical profession during a recent visit to Paris, and while in London he has been X rayed at the Middlesex Hospital. Screen examination showed that an amazing rotation of the arm, for example, was not in the nature of a dislocation of the shoulder, but to a very remarkable range of scapula movement. X ray examination of some of Mr. Kingston's most remarkable positions was impossible for technical reasons, but attempts were made to get views of his vertebral column and also of his hip-joint, which present interesting features under the screen.

ADVERTISING HEALTH.

Mr. T. Crew, clerk to the Leicestershire Insurance Committee, has written a book called "Health Compendium and Health Publicity" (the Reader Printing Co., Sanvey Gate, Leicester. Pp. 260. 7*s.* 6*d.*) which gives a brief account of most of the societies working for the advancement of health in this country. The information is conveniently arranged for reference, and has a foreword by Prof. A. Bostock Hill, as well as short articles by Dr. C. J. Bond on Mental Hygiene, and by Dr. David Kirkhope on the Baby Week Movement.

"The problem before us to-day," says Mr. Crew, is "to interest the adult population, who, in many cases, are ready to believe that all health matters should be left to the constituted authority to deal with." He points to the tremendous success of commercial men in making people want things they have not wanted before, and considers that in "advertising health" the film and the poster are of immense value. The message of the poster may be either by words or pictures, but it must be bold and simple; Mr. Crew believes in the "small distinctive poster." Every page of his book is headed with a slogan—such as Bacteria Don't Like Soap—and the series is useful, though some of the examples would hardly be acceptable to the medical purist. Even more interesting, however, are the many reproductions of British and foreign posters used in health propaganda, and those who have to organise Health Weeks and the like will do well to look at them.

What is known about physiology and pathology does not always lend itself to didactic mass-instruction, and it is easy to criticise popular teaching on the ground that truth is often sacrificed to symmetrical theory. Moreover, as Prof. Hill implies, there is a lurking danger that we may become in time a race of sanitary prigs in whom health is an obsession. But the need for popular knowledge of hygiene is real and urgent, and although much can be done—and is best done—by the general practitioner, there is scope for an immense amount of propaganda by societies, hospitals, and municipalities; criticism of their endeavours, where it is needed, ought to be constructive only.

Mr. Crew's book appears at a time when its subject is much in people's minds, and many will find it interesting to peruse. It may not be out of place to recall that on Oct. 12th these questions are to be considered by the St. Pancras branch of the British Medical Association, which will meet at 9 P.M. at the Association's house in Tavistock-square to hear an address by Sir Thomas Horder on the Aims and Methods of Health Education.

HYGIENE IN THE TROPICS.

WE have already reviewed the first part of Dr. Mary Blacklock's excellent primer [1] and welcome the appearance of the second ("An Elementary Course in Tropical Hygiene." Part II. John Bale, Sons and Danielsson. Pp. 108, 2*s.* 6*d.*). As Dr. Andrew Balfour remarks in his preface, the rules of health which it commends "are those which should be practised by all who live under tropical conditions, and more especially by native school-children," and "although intended in the first instance for schools in tropical Africa, this carefully written and painstaking work will be of service to all teachers who have to impart a knowledge of those important matters on which so much depends, and which, even at the present day, are so often neglected."

The second part, like the first, is written in clear and simple English, the information is well selected, and the illustrations good. It is written as a text-book for older children, students in training colleges, junior sanitary officials, nurses, and the like, but it forms an introduction to medicine, more especially as practised in the tropics, which would be interesting to many whose reading is merely desultory. Tropical medicine is a fascinating subject, and here it is well presented to the layman.

THE PRINT COLLECTOR'S QUARTERLY.

THIS useful periodical will be issued from 1927 onward in the months of January, April, July, and October, and will be on sale early in the month of publication at the price of 17*s.* 6*d.* per annum or 5*s.* per number. The magazine was founded in 1911 in America, but it was transferred to England in 1921 to the house of Messrs. J. M. Dent and Sons, Ltd. The illustrations and catalogues will be found very useful to collectors and all who are interested in prints and drawings, old or modern.

"CALCARDS."

ONE of the difficulties of working out a diabetic diet successfully has been the mathematical calculations involved, which have thrown too great a strain on the leisure of the average practitioner and on the ingenuity of the average patient. During recent months various simplified systems have been evolved, notably the "line ration" scheme and the "five grain" scheme, which have wonderfully eased the burden of constructing a suitable dietary. "Calcards" (David Challen, Ltd., 10, City-road, London, E.C. 2*s.* 9*d.*) forms another such system. A box is supplied containing upwards of 150 cards with vertical rulings, giving for each food substance taken the protein, the carbohydrate, the fat-content, and the total calorific value. By grouping a number of these slips together it is possible to select a varied number of meals which fulfil the requirements which have been prescribed, the only mathematical process involved being simple addition. The figures are given in decimals to two places, and are sufficiently accurate, and for the principal articles of diet weights up to 7 oz. are given.

To diabetic patients and to athletes in training and others interested in balanced rationing, "Calcards" should be of considerable assistance in arranging a reliable and varied menu.

[1] THE LANCET, 1926, i., 1074.

The Harveian Oration

ENTITLED

BEFORE AND AFTER OPERATION.

Delivered before the Medical Society of London on Oct. 11th, 1926,

BY SIR BERKELEY MOYNIHAN, BART., K.C.M.G., C.B., F.R.C.S. ENG.,
PROFESSOR OF SURGERY, UNIVERSITY OF LEEDS.

THE distinguishing feature of the intellectual life of the last half century has been the progress of science. The advance has been revolutionary. New ideas are to-day expressed in so new a language, new conceptions and changed methods have created so new a vocabulary, that to the scientist of 50 years ago much of the literature of to-day would be unintelligible. In every department of scientific work the advance has, indeed, been stupendous, almost passing belief. Nor is the wonder of it lessened when we compare or contrast it with all that has happened in other departments of intellectual activity. In painting, in sculpture, in the design or the craft of architecture, in literature, we have altered our immediate interests perhaps, and have changed our tastes, but when we compare our efforts with the ideas and achievements of days gone by we remain, as we were, in a state of profound and reverent humility. In craftsmanship, as we have learned only in the last two or three years, perhaps nothing more exquisite has been wrought by men's hands than the finished perfection of the works which have been hidden for over 3000 years in the tomb of Tutankhamen.

ADVANCE IN SURGERY.

In applied science nothing so beneficent has ever occurred, nothing surely of greater advantage to humanity, than the progress of surgery in the days since Lister introduced his new methods. Of Lister, whose centenary we are shortly to celebrate, it may truthfully be said that no man has laboured so fruitfully in the material service of mankind. He has saved more lives than all the wars of all the ages have thrown away; he has lifted a heavy load of suffering and of sorrow from millions of hearts; his fame is imperishable. So great are the changes which he brought about that none can adequately appreciate them to-day.

The first result of Lister's work was the perfecting of the accepted methods of operation. Operations which had been of formidable danger became safe; recovery was not only more frequent and more rapid, but the severity of an operation and the suffering it entailed were so much diminished that the hindrances to its performance were no longer serious either to the patient or to the surgeon. The operations which had long been practised always with anxiety, and often with remorse, grew more frequent, and of unimagined safety. This led to a notable invention of new methods and their quick adaptation, perhaps after frequent change, to new experiences. Not only were new methods quickly discovered, modified, and steadily improved, but their appropriate application to the conditions disclosed during operation was by degrees fully established. At almost every step embittered controversies arose. The old quarrels as to priority in the invention or modification of methods and of new instruments seem now merely laughable, though at the moment so much was felt to depend upon them and to centre round them. Controversy is the life of scholarship, though, unhappily, acrimony and coarseness are apt to creep in and to soil the contestants.

Among the great adventures and the new enterprises which grew slowly out of improving methods were two which changed the face of surgery. These were, in the first place, the recognition and study of earlier stages in structural diseases than were ever before accessible, and secondly, the institution of plans to search for associated lesions beyond the immediate field of operation as soon as this latitude to the surgeon was made permissible by success. When in any abdominal operation the inspection of structural changes in the organ arraigned was made, conditions were at first disclosed of which neither the eye nor the hand of the surgeon had any experience, nor could the literature of medicine offer any help. Discrepancies were soon recognised between those pathological changes with which the long experiences of the post-mortem room and of the museum had made us familiar and those changes seen during operation. And when, unhappily, a patient died, a comparison of the description given by the operator with the conditions found on the autopsy table led to a considerable measure of disagreement. The surgeon was rebuked, not without contempt, for proclaiming the existence of conditions not discoverable to the same extent, or in the same degree, in the post-mortem room. And post-mortem experience was held to be infallible. It was to counteract this foolish view that I coined the phrase "pathology of the Living," and in exposition upon this text endeavoured to show that it was the condition of the parts during life which it was most essential for us to know if we were to help the living. Death not only changes the lineaments of a man's face, but so profoundly alters the parts affected by disease that the conditions before and after death may seem to be hardly comparable.

A study of the pathology of the living has led to a complete revision of our knowledge of abdominal diseases. Before the surgeon came our acquaintance with duodenal ulcer as a disease affecting multitudes of men and women hardly existed; a diagnosis of duodenal ulcer apart from its lethal complications had almost never been made. Of gastric ulcer, in respect of pathology, we knew much as a result of the work of Mathew Baillie, Cruveilhier, and Brinton, but the correlation between our pathological knowledge and our clinical acquaintance with the disease was woefully incomplete. The diagnosis of gastric ulcer was wrong in a very large proportion of cases as the surgeon was quick to discover. So with cholelithiasis. To read the first edition of Fagge's work on Medicine, one of the greatest books ever written and my sheer delight in student days, and to compare what he knew of cholelithiasis with what we know to-day, is to realise the immense gain to clinical medicine which has resulted from the work of the surgeon. Surgery, indeed, is the strongest of all research weapons in the hands of the physician, and posterity, I fear, will not hold us guiltless of the sin of allowing hostility, or imperfect understanding, to grow up between physician and surgeon in this great creative period in the science and the art of medicine. How much more rapid our progress would have been, how much more accurate our labours, what waste of time and effort would have been spared, if, instead of living each inside his own impenetrable ring fence, the physician and surgeon had met on common ground in the interest of the patient. Our only excuse, the only condonation, is that the sin was not so much of our own creation as hereditary.

VISCERAL INTERACTION.

A further most interesting feature of our extended operative work has been the disclosure of the interaction between the various viscera. We believe now that all gastric and duodenal ulcers are secondary affections; that their cause often lies in an infection elsewhere; and that this infection travelling by various paths may be revealed at the operation which is undertaken primarily for therapeutic purposes. So, too, with the origins of cholelithiasis, and with the causes of acute and chronic pancreatitis, and with their relationship to diseases of the appendix and gall-bladder. The interaction between the liver and the spleen is admirably illustrated by the effects of splenectomy. In cases of acholuric jaundice this operation has in the clearest manner settled for ever the old controversy as to the possibility of hæmolysis as a factor, a causative influence, in cases of icterus. When the spleen

is removed in Banti's disease, the terminal stage of splenic anæmia, the effects on the ascitic condition give the clearest proof as to the influence of the spleen upon the liver. The truths so learnt could be mastered in no other way than the way of surgery, by means of an operation which is not only curative, but is also a research method of the highest value. Surgical research demands infinite patience, great insight, dispassionate intellectual integrity, and sound judgment. A great generalisation of relevance not only in surgery but in medicine and in physiology may spring from all these. Experiments of immeasurably less value, of far less difficulty, involving no arduous responsibility, not demanding a sustained clinical observation, when performed upon animals in a laboratory are hailed as scientific achievements deserving and receiving the recognised reward which the Royal Society, a society founded to "improve knowledge," hastens to convey. But when man with his diseases, in all their baffling and manifold relationships, is submitted to inquiry the labour, judged by the standards of its reward, is unscientific! At least I am compelled to draw this lamentable conclusion when I see that no surgeon in active practice to-day is a Fellow of the Royal Society.

SURGERY AND ITS LIMITATIONS.

The mere craft of surgery is now hardly capable of great advancement. It is admittedly rash and dangerous to make such a statement with confident assurance, but I have no hesitation in so doing. If, for example, ulcers or malignant growths in the stomach are to be removed, is it possible to imagine that the mechanics or the artistry of the accomplished surgeon can be changed in any notable degree for the better? There is nothing in the craft of any art so exquisitely beautiful that it can surpass that shown by the skilful master of surgery. To watch such an artist is to realise that only infinite practice, the most solemn devotion to the details of craftsmanship, and a profound sense of spiritual dedication to a high purpose, are capable of creating and so ennobling the work of a man's hands. The results, too, of such labour by the most expert craftsmen, if they have not quite attained, are almost as near to finality and perfection as human effort can make them. This truth surely needs no illustration before such an audience as this. A word of comment and of warning is, however, necessary. Surgery is not learned easily. The training is arduous and protracted; indeed, it lasts a man's lifetime. It must begin under a master's eye and be influenced by his criticism, and not less by his spiritual encouragement. It must not be light-heartedly or recklessly undertaken, nor can it ever be a matter of display. In recent years, and especially, I think, since the war, the incompetent and ill-trained operator is allowed too free a hand and enjoys too wide a scope. The methods of surgery learned in the war do not fulfil the needs of civil life. The exigencies of war, the haste of war, and the sudden and heavy pressure of urgent work made it necessary to have many operators at once available. Their methods could not, and should not, be the same as those in the deliberate, full, and scrupulous ritual which alone is permissible in our more tranquil daily work. There is to-day too much bad surgery; surgery performed by those who have, perhaps, some natural skill which has never been trained and moulded to right practice. It is for the student of surgery

> "To act to-morrow what he learns to-day:
> Here work enough to watch
> The Master work and catch
> Hints of the proper craft, tricks of the tool's true play."

Our art at least must not be made tongue-tied by authority, but be given the freedom, vigour, and inspiration which come, perhaps insensibly, from contact with great masters. In surgical work craftsmanship is much and knowledge is much, and wisdom, which is the timely and rightful application of knowledge, is more, but as we establish our place in the world it is chiefly character that counts. Much of the inferior work now being done could not continue and would never have begun if the large hospitals to-day were doing their full duty to the public. There is need of more beds, of new departments, of more lavish equipment, but there is not sufficient money to supply our wants. Debts are heavy, overdrafts are many, waiting-lists are long. The public needs are great and urgent and should be met. We should regard the maintenance of the nation's health as worthy of the first demand upon the public purse and upon private beneficence.

IMPROVEMENT IN METHODS.

If, then, the mere technique of surgery has almost reached its limits, if no further great development of the power of our hands is possible, how is surgical work to advance? I believe that there is great room for improvement in two directions. We should seek to obtain an earlier access to our patients, and we should use far greater efforts than now seem general to improve the chances of the patient before operation and to help him after the operation is completed. Many patients come to us when their condition is so gravely affected either by the general advance of their disease, by its very nature, or by some sudden complication such as infection or hæmorrhage, that operation upon them cannot be contemplated without the deepest misgiving. Our first thought, and all our efforts must then be directed, not so much to the operation itself as to the resuscitation of the patient. By methods which are growing in number and in value he must be restored to a degree of health and of resistance which, so far as it is possible, will make the operation safe.

An earlier access to the patient is abundantly justified by the success of surgery. The aid of surgery must no longer be withheld until there is otherwise the prospect or the certainty of a loss of life. Relief from suffering is sometimes no less important than rescue from impending death. So many conditions are to-day allowed to drag their weary way along until the patient is suddenly confronted with a new and far graver peril, or is driven by the misery of suffering, when his health is squandered and spent, at last to seek relief. How is it that chronic duodenal and gastric ulcers are permitted to continue their destructive march until perforation occurs? At least nine out of ten of these perforations should be prevented. Why cannot the surgeon have the chance to help the sufferers from cholelithiasis in earlier stages of their disease? How is it that so very few cases of cancer are seen in an early condition? Every accessible cancer is at first curable. The statistics of the Leeds General Infirmary show this truth beyond dispute. Our cases of cancer of the breast are divided into three classes—

Class I., including cases in which there was no invasion of the axillary glands or of any other tissue than the breast, even at operation or after microscopic examination.

Class II., including cases in which there was invasion of the axillary glands but in which, apart from the skin over the tumour, there was no other part affected so far as could be ascertained.

Class III., including all other operable cases; cases of deep ulceration of the skin, &c.,

The percentage survival after three, five, and ten years is shown by the following figures, given by Miss Gretta Wardle, M.B.: —

	After three years.	After five years.	After ten years.
Class I.	88·2	87·5	77·7
„ II.	39·5	21·7	15·8
„ III.	25·9	3·45	0·0

More cases are operated upon now than formerly, but the increase, unhappily, is almost exclusively among Class III. cases. The efforts of the Yorkshire Cancer Campaign, however, are already resulting in opportunities for operation in earlier stages of the disease, and there appears to be a clear obligation upon our profession now to give such general instruction to the public as will make them realise the importance of seeking medical advice for conditions which they have too long regarded as trivial, or have ignored. A campaign of public education in matters

of health is long overdue. If it is frankly and fearlessly undertaken we shall enlist public understanding and sympathy with the work of our profession, and we shall never again witness the lamentable exhibition of bitter prejudice against our attitude and ideals which recently spread throughout the country. Prejudice is the emotional reaction of ignorance to truth. Let us dispel ignorance. Our case is surely unanswerable.

Before any surgical operation is undertaken we must, in the first place, be sure that mechanical treatment rather than medicinal or any other form of medical treatment is necessary or preferable by reason of its greater expedition or greater safety. In the second place, we must ensure that the patient is in the best physical and mental condition to undergo operation. In the third place, we must pay great regard to the exact appropriateness of the procedure employed to the conditions disclosed. And finally, we must not be content to believe that our interest in the patient ceases if he survives the operation, or on the day when his wound has soundly healed.

When contrasted with medical treatment, an operation is often considered as the method by which a new risk to the patient is being added, and little thought, if any, is given to the far greater risk from which the patient is, perhaps, being rescued. If a patient chances to be the victim of a disease which causes a good deal of discomfort, even it may be a formidable degree of temporary suffering, yet does not on the whole greatly impair the general or physical efficiency, and does not appear to be a grave menace to life, it may well seem that an element of danger is being introduced when an operation is mentioned. We have, however, to recognise that the safety of surgery has become so assured that its methods may be employed, and are daily employed, not only for the rescue of a threatened life, but for the relief of recurring pains, discomforts, or any other forms of physical disability. But there is something far more important than this, something which requires the most positive statement, and it is this: that surgical treatment for many diseases is not only more effective than medical treatment, it is far safer. In my little book on Gastric and Duodenal Ulcer I review ten years' work in the operation theatre, and I discuss the material available from the post-mortem room over the same period of time. The irresistible conclusion must be drawn that by comparison with surgical treatment in competent hands medical treatment is so dangerous in the chronic form of these diseases that fresh and far sounder arguments for its continuance, or for any reliance to be placed upon its permanent effects and value, must now be brought forward. Medical treatment having been faithfully tried in one or two attacks of gastric and duodenal ulcer, and having failed, a repetition of the treatment will be followed by a higher mortality than is now associated with surgical treatment in skilful hands, and the chance of permanent relief is not to be compared with that which surgery affords. And the same arguments hold good with regard to cholelithiasis. The deaths that follow upon surgical treatment are deaths resulting from operations necessarily extensive because of the advanced state of the disease, which must too often be performed upon patients suffering from jaundice, hepatic insufficiency, acidosis, carcinoma, chronic pancreatitis, or some other preventable complications. The early recognition of these diseases should be the quest of the physician. In those stages they may be amenable either to prevention or to relief. In the stage when we see them to-day there is no skill even of the most practised physician which can do more than render the diseases somnolent, not only ready to awake and create afresh the old disturbance at any moment, but in their slumber to cause changes which hasten a patient to the grave. If the physician instead of a too tenacious hold upon the declared case of cholelithiasis, for example, would seek out the symptoms and the signs of the earliest phases of the disease, its antecedents, or its causes, and so enable us to counteract its origins and to check its development, we should all be happier. Our hospital system, with its most inadequate supply of beds, unfortunately restricts the activities of the physician to the patients whose diseases are advanced. The forward-looking minds in medicine are attracted by the prospects of preventive medicine.

Surgical treatment, in many abdominal conditions, may therefore often truly claim to be speedier and safer than medical treatment, and to be able to restore the patient to a brighter degree of health and to a greater freedom for enjoyment. But it must be competent and careful surgical treatment, carried out by those who have trained themselves to secure the best results.

In the future we must, I think, look for advance in surgery not so much to improved methods of operative technique, as to a wiser application of methods now almost perfected. It is therefore our task to improve surgical judgment, and to that end a long survey of past experience is essential. And it is most necessary for us to devote a greater measure of attention to the preparation and after-care of the patient. Surgery has been made safe for the patient; we must now make the patient safe for surgery.

BLOOD TRANSFUSION.

The procedures by which we lessen the risks of operation are already increasing in number and in efficiency. Among the most valuable I would place the direct transfusion of blood. For my early knowledge on this subject I am greatly indebted to Crile. In the spring of 1908 I paid a visit to him in Cleveland for the express purpose of learning something of his technique, and brought back with me the instruments he then used to anastomose the radial artery of the donor to a vein of the recipient. The method was difficult, and had the disadvantage that we had to judge of the amount of blood given by observing the effect on the receiver or upon the donor, or by measuring the time during which blood flowed between them. The results, nevertheless, were good. From that year onwards I have transfused blood in all needful cases, and there can be no doubt that many lives have been saved thereby, and in many more cases convalescence has been hastened.

Transfusion is used when severe hæmorrhage has recently occurred, as in cases of ulcer of the stomach or duodenum, in splenic anæmia, in fibroid tumours of the uterus, or when carcinoma is present; in cases of anæmia associated with growths in the stomach or colon; in cases of general enfeeblement when the red cells are fewer than 4,000,000. It is also used not infrequently in cases of inoperable malignant disease when deep X ray therapy is being applied, since a considerable reduction in the number of red cells is sometimes found to follow exposure to these powerful rays. As a rule only one transfusion is necessary, but I have on a few occasions given as many as five transfusions. For example, in a very severe case of splenic anæmia which I saw with Dr. G. W. Watson the red cell count was 900,000, the abdomen was full of fluid, and the liver enlarged. Five transfusions of blood brought the count up to 4,300,000; the abdomen was twice tapped and about 30 pints of fluid removed. I performed splenectomy. Convalescence was easy and assured; health and strength were regained, and no fluid has since accumulated within the abdomen. Transfusion may be employed, too, both before and after operation. On many occasions after the operation of gastrectomy, especially for carcinoma or for jejunal ulcer, the transfusion of 15 ounces of blood a few days after operation seems to alter the whole prospect of the case. The patient feels better at once, is more hopeful as to his recovery, and inclines to food for which he may before have felt distaste.

The transfusion of blood has many virtues: the red blood cells seem to act as well in their new surroundings as in the old; they last a sufficient length of time to tide the patient over a crisis; they appear to encourage and, indeed, to cause the red marrow of the recipient to produce red cells more rapidly and

in greater number than before; the fluid remains in the vessels far longer than is the case when saline solution alone is infused; and finally, conditions such as the mobilisation of cholesterol, which may be of incomparable assistance in the fight against infections, are at once established.

POST-OPERATIVE PROCEDURE.

Too much has been done by catharsis and starvation to reduce the condition of patients before operation. I encourage patients to drink as much fluid as possible for a day or two before operation, and of all fluids a 5 per cent. solution of glucose appears to be the best for this purpose. And I suppress the philocathartic propensities of nurses. An evacuation of the intestine the evening before an operation is all that is necessary if the patient has been accustomed to a daily action. If constipation has been the habit it is, perhaps, a mistake to change it, or to endeavour to do so, in the last few hours before operation. I am sure that patients suffer far more from flatulence if they have been purged. And the deprivation of fluids after the ardent administration of pills and draughts and enemas is a grave disadvantage to all patients. It is a mistake to begin an attack on the patient by the same ritual immediately after operation upon any of the abdominal viscera. They have been subjected to a rude invasion and are no doubt feeling the affront. Why not leave them alone for 24 or 36 hours at least until their self-respect is recovered? There is too much meddlesome interference in these matters, both before and after operation, and a great deal of quite needless discomfort is added to the patient's ordeal. There is in the great majority of cases no difficulty in compelling the intestine to act, whenever this is desired, by aperients, enemata, the administration of eserine, or even of pituitrin if there has been intestinal obstruction. The stretching of the anal sphincter after the operation of colectomy, or the introduction of a short tube within the rectum in other cases is often a help in allowing the unimpeded escape of gas.

BLOOD EXAMINATIONS IN SURGICAL WORK: ACIDOSIS.

We are quickly learning the great advantage of blood examinations in surgical work, and we are realising how closely the clinical condition of a patient corresponds with and is explained by the chemical state of the blood. One of the most serious post-operative conditions, formerly almost invariably fatal, is acidosis. It may occur as a sequence to operation upon a dehydrated and starved patient, upon patients who have jaundice or hepatic insufficiency, or whose kidneys work inadequately; or it may occur as a direct consequence of the anæsthetic, especially if chloroform is used. It is some years since chloroform has been given to any patient of mine; it is far too dangerous a drug, and over its late effects, often unrecognised but none the less serious, we have had little or no control until recently.

Acidosis was formerly one of the most dreaded of post-operative complications; now, happily, by foresight and by after-care the risks of it are greatly diminished. The reaction of the blood is always faintly alkaline, and even in extreme degrees of acidosis shows little change; it never, of course, becomes acid. When in the body fixed acids, oxybutyric acid, and diacetic acid are produced they are at once combined with the sodium bicarbonate of the blood as a result of the "tampon action" of Bayliss, and carbonic acid is produced. The respiratory centre being extremely sensitive to this acid is stimulated, respirations are increased, and the pulmonary ventilation throws off the acid until the original relationship of bicarbonate of soda and carbonic acid is restored. In this reaction bicarbonate of soda has been used up, and there is consequently a diminution of the alkali reserve, and there results that "modification of the normal equilibrium between acids and bases whereby the power to neutralise acids is diminished," that is acidosis. There are other buffer substances in addition to bicarbonate of soda; the blood cells may lose their potassium and sodium to the plasma and so help to keep the balance between acids and bases. So far as elimination is concerned the power possessed by the kidneys to excrete acid salts and to leave behind a part of the base with which the acids are in combination is one of high value. By the intestinal canal phosphoric acid is excreted. The loss of equilibrium between acids and bases may clearly be due, not only to increased production of acids which engage a larger quantity of bases, but also to a primary deficiency in the alkali reserve, or even to a combination of these two conditions, hyperacidity and hypo-alkalosis. The acids produced in excess are intermediate products in imperfect fat katabolism. The incineration of fats is set alight by carbohydrates, and a deficiency in carbohydrates is therefore the main causative influence in acidosis; accordingly the indication is to supply more carbohydrates.

The carbohydrate upon which we rely in cases of acidosis is glucose. It is, however, not seldom difficult to administer it, for vomiting is often so constant that none can be given by the mouth; little is absorbed when introduced subcutaneously; and none in sufficient amount, or with sufficient rapidity is absorbed from the rectum in a patient greatly enfeebled. Happily, the intravenous method of administration has proved to be extremely satisfactory. We now adopt the method suggested by Matas of giving a 5 per cent. or 10 per cent. solution of glucose, with or without bicarbonate of soda, continuously, an apparatus being used which maintains a constant temperature. And the glucose is utilised by administering insulin at the same time either intravenously with the glucose or hypodermically under very careful restrictions. Though this method has only been used by us for the last two years it has already proved its high value, and beyond question has saved lives.

The necessity for the control or the prevention of acidosis is at its highest in cases of diabetes. The risks of operation were formerly very high and not infrequently any surgical measures considered desirable were either reduced to the very smallest degree or were postponed or even denied to the patient. In cases of cholelithiasis, for example, I have for this sole reason often known a necessary operation withheld because of the fear of death or of imperfect and protracted healing of the wound. To-day I regard the co-existence of glycosuria and cholelithiasis as a still more urgent call for operation. And there is no longer any doubt that, with care before and after operation, with regular blood examinations as a part of the routine, the risks of surgical treatment are no greater in these cases than in others. It is important to recognise the value of a supply of utilisable sugar in diabetes, and possibly the administration of carbohydrates before operation, together with insulin in quantities sufficient to ensure their assimilation may sometimes be necessary. Fluid must be given generously and catharsis and starvation both avoided. Glucose intravenously and insulin subcutaneously in the proportion of 2 g. of the former to 1 unit of the latter must be given to the extent deemed necessary, a constant watch being kept on the urine for sugar and diacetic acid. The importance of avoiding any infection during or after operations upon diabetic patients, because of its effect in hastening, or even causing, coma is probably familiar to many surgeons. In such cases insulin appears to have less value than usual. The necessity for dealing actively with infections in those who suffer from diabetes is not less important.

ALKALOSIS.

The opposite condition, alkalosis, is sometimes, though more rarely, a source of anxiety after operation.

Alkalosis is also a result of a change in the ratio of free carbonic acid concentration to bicarbonate of soda concentration. The free acid may be reduced either by increased pulmonary ventilation, or by augmentation of the combining power of the blood plasma with carbonic acid. In either case alkali reserve in the blood is increased, and there is a consequent tendency of the blood to veer more strongly towards the alkaline side. Expressed by Henderson's formula, the blood reaction at any moment depends upon the balance—

$$\frac{\text{Free } CO_2 \text{ concentration}}{NaHCO_3 \text{ concentration.}}$$

An increase in the numerator or a decrease in the denominator indicates acidosis; a decrease in the numerator or an increase in the denominator indicates alkalosis. A change in both numerator and denominator in the same case may at times be observed. Any change in the numerator excites an attempt on the part of the body to compensate by causing

an equal change in the denominator and vice versa. In alkalosis resulting, for example, from a greatly lowered CO_2 content of the blood the compensatory effort takes the form of an increased excretion of alkali and a consequent lowering of the bicarbonate of soda in the blood plasma. If, on examining the blood, this lowered plasma bicarbonate is found, the tendency is to assume that it is due to acidosis. There is, consequently, a danger of confusing the two opposite conditions. They can, however, be distinguished after an examination of the urine. In acidosis there is an increased excretion of ammonia, produced in order to economise the "fixed" alkalis of the blood, whereas in alkalosis the chief need being the riddance of these attacks, ammonia production is no longer required, and is, therefore, reduced to the smallest degree. The two conditions, acidosis and alkalosis, are alike, too, in this—that acetone bodies may be present in the urine in either condition. In acidosis they are in part at least the cause of the condition; in alkalosis they are produced as a part of the compensatory mechanism which seeks to neutralise the excess of alkali.

Alkalosis, then, may result either from an excess of alkali or from a decrease in CO_2. The clinical conditions in which it may occur are:—

1. *Excessive Overdosage with Alkalis.*—The danger of this is small, except, perhaps, in cases in which the renal functions are impaired. Venables reports [1] seven cases of alkalosis following the alkaline treatment of duodenal ulcer. One patient, a male aged 50, who had suffered for a few months from excessive vomiting, died comatose. He became very depressed, complained of severe headache, of intolerable itching of the skin, and of complete anorexia; he suffered a recurrence of vomiting, and was extremely irritable. The blood-urea was almost quadrupled [was this a case of uræmia?]. Hardt and Rivers[2] relate a similar series of cases of toxicity. Alkalosis has resulted from the administration of sodium bicarbonate in cases of acidosis, especially when associated with poor renal function.[3]

2. *In Certain Gastric Disorders where Free HCl is Diminished.*—For example, in cases of duodenal or gastric obstruction, either accompanied by copious vomiting or controlled by frequent lavage of the stomach, both involving a constant loss of acid. The condition has been produced experimentally by McCann.[4]

3. *In Hyperpnœa due to Increased Pulmonary Ventilation with Excessive Loss of CO_2.*—Alkalosis is accordingly found when there is a want of oxygen, as in those living at high altitudes and in carbon monoxide poisoning. It may follow prolonged immersion in hot water, in consequence of the hyperpnœa induced to keep down the body temperature, and it may be present in cases of high fever. In alkalosis the rise in the carbon dioxide combining power of the blood may increase from a normal of about 60 per cent. to 120 per cent. or even more, and there is a diminution in the chlorides to nearly one-half of the normal. The blood-urea is raised.

I have only a slight experience with this condition, but I have no doubt that it has been overlooked in my earliest experience, and I should have remained unfamiliar with it but for my colleague Dr. MacAdam. The difficulty in its recognition is largely due to the resemblance which the symptoms caused by it may bear to those present in acidosis. It is to be feared in those cases where vomiting has been a long-continued and distressing feature before operation. The chief symptom is vomiting, which is both copious and frequent. The stomach may be emptied of a large quantity of fluid and yet fill again very quickly, for within an hour or two severe and prostrating vomiting may begin afresh; headache, generally occipital, is severe and often throbbing in character, and intense dizziness occurs on the slightest movement of the head; there is much pain in the back. Numbness of the extremities appears early with facial ridigity. This is quickly followed by tetany with the characteristic spasm of feet and hands. In the severer cases general convulsions may appear. There is increased electrical excitability and Chvostek's and Trousseau's signs are both present. The patient after a period of irritability will drift into a comatose condition unless the cause of the symptoms is recognised.

The *treatment* consists in supplying fluid by the rectum and subcutaneously, and by the intravenous injection of saline solution in quantities of from one to two pints twice at least during the 24 hours. There is a good deal of experience to show that a saline infusion produces only a temporary effect, an effect which rarely lasts for more than six to eight hours, and a repetition of the administration is therefore necessary and is to be preferred to the injection of a larger quantity on a single occasion. A very dilute solution of hydrochloric acid, one teaspoonful to 10 ounces of water, may be given as a beverage, but the frequency of the vomiting in the acute phase of the condition makes this of little value. With a Jutte tube in the stomach the fluid has a better chance of absorption and may for a time be given in larger quantities; the excess will escape by the tube.

CHOLELITHIASIS.

Evidence as to the high value of blood examination is found also in cases of cholelithiasis and of genito-urinary diseases. The work of Dr. Cecilia Shiskin and of Mr. G. Collinson upon my cases of cholelithiasis has shown that a knowledge of the cholesterol content is helpful in diagnosis. The work of Dr. MacAdam and Dr. Shiskin [5] upon the cholesterol content of the blood in genito-urinary sepsis has shown how significant a low value may be in demonstrating the need for the rehabilitation of the patient before an operation is undertaken. In such cases the determination of the blood-urea is also of great importance. It is not an extravagant claim to make for these methods that in many cases, perhaps even in a majority, they may prove a more reliable guide than the clinical sense of the surgeon. In the series of 80 cases examined by MacAdam and Shiskin there were 18 with hypocholesterolæmia, and of these 16 died of pyelonephritis; in only one-half of these cases "did the clinical opinion of the general condition of the patient contra-indicate operation." A low cholesterol content and a large excess of blood-urea indicate the need for delay in operating and for the wise employment of all methods in repairing the damaged health of the patient. Among these methods are continuous slow drainage of the distended bladder in cases of enlarged prostate, a dietary generous in carbohydrates, and the intravenous administration twice, or even thrice, daily of normal saline solution in quantities of one pint on each occasion. The direct transfusion of blood finds useful application here also.

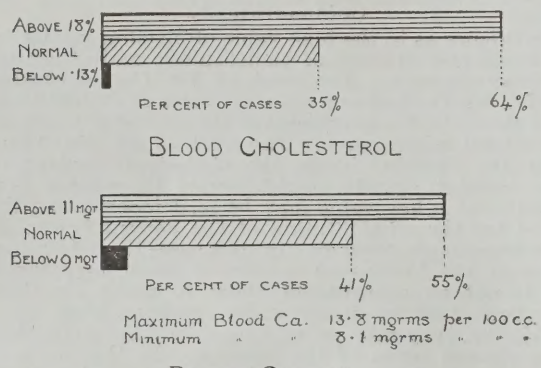
I have realised the possibility of augmenting the cholesterol content of the blood by transfusion; the increase is found to be out of all proportion to the cholesterol content of the transfused blood, and it would seem that there is a quick and lasting mobilisation of cholesterol from the storage deposits in the body of the recipient. This hypercholesterolæmia indicates very probably a strengthened defence against infection. Perhaps no operation in surgery shows so striking a difference between procedures of haste, and of judiciously used delay, as the operation of suprapubic prostatectomy.

POST-OPERATIVE RESULTS IN JAUNDICE.

One of the most satisfactory results of the careful preparation of patients before operation has been seen in those who were jaundiced. Formerly such patients were not seldom denied the relief of surgery because of the grave risks attached to it, and no less an authority than J. B. Murphy advised against operation in cases of carcinoma of the head of the pancreas. One of the disasters which occurred after operation was unceasing leakage of blood from many vessels. On post-mortem examinations large masses of blood were found in the peritoneal cavity, in the subperitoneal tissues, in and around the wound, after

[1] Guy's Hospital Reports, 1925, lxxv., 152.
[2] Archiv. Int. Med., 1923, xxxi., 171.
[3] Harrison: Jour. Amer. Med. Assoc., 1925, i., 671.
[4] Jour. Biol. Chem., 1918, xxxv., 553.
[5] Brit. Jour. of Surgery, 1925, xii., 425.

a great deal had been already lost in the dressings. An examination of the blood showed a delayed coagulation time. After a visit to Kroneker's laboratory in Berne I began the administration of an alien serum to all jaundiced patients; antidiphtheritic serum was first tried when needed in haste; afterwards freshly prepared rabbit's serum given in doses of 20 c.cm. twice or thrice repeated. Blood examination before and after showed a reduction in the coagulation time. It is supposed that the prolonged coagulation time in jaundice may be in part due to a reduction in the amount of calcium in the blood. To reduce this period the administration of calcium chloride by the mouth was first suggested by Almroth Wright, but my experience seemed to show that little or no good came from it. An examination of the blood in a series of 55 consecutive cases of cholelithiasis has shown that the calcium content is often high. If the normal is assessed at 9 to 11 mg. in 100 c.cm. of blood, 30 patients were found to have a calcium content of over 11 mg., 22 had a normal content, and 3 had a content below 9 mg.; four of the patients



Examination of the blood in cases of cholelithiasis to show the cholesterin and the calcium contents.

were jaundiced; their blood calcium was 9·2, 8·6, 8·6, and 8·1 respectively. If a diagram is made showing the cholesterol content of the blood in cholelithiasis it is found nearly to correspond with a similar diagram showing the calcium content; hypercalcæmia and hypercholesterolæmia almost coincide. To increase the calcium content is not easy. A very slight and a very transient effect is produced by the oral administration of a calcium salt; a very definite and not so transient an effect is produced when 5 c.cm. of a 10 per cent. solution of calcium lactate is introduced into the veins; being in crystalloid form the calcium is quickly excreted by the liver cells and escapes into the bile. To counteract the quickly passing stage of calcium increase a repetition of the dose on three or four consecutive days, before and after operation, reduces the coagulation time when this is most needed. (My chemical assistant, Mr. G. Collinson, is responsible for the estimations and for the diagram.)

In jaundiced patients, or in patients in whom there is hepatic insufficiency (the tests for which are not very satisfactory), a direct transfusion of blood, the intravenous administration of glucose, with or without a little carbonate of soda, on two or three occasions, or continuously, a very generous carbohydrate diet, and an abundance of fluid by the mouth, all help to lessen the dangers of operation. In such cases chloroform should never be given, and as little ether used as possible. Local anæsthesia with gas and oxygen will often suffice; the surgeon, remembering that it is not his comfort during the operation but the patient's safety that counts, does not ask for a complete relaxation of abdominal muscles.

Vomiting is sometimes a distressing and a dangerous symptom after operation. It may be due to many causes, adynamic or obstructive; it may be the warning symptom of acidosis; it may occur in cases of urgent surgery for acute peritonitis. The moment that it appears to be anything more than the result of the anæsthetic the stomach-tube should be made ready. Early evacuation of the stomach with a little lavage may check the further development; the discomfort caused is amply compensated by the relief which soon follows. If vomiting is frequent, small amounts only being ejected, it is certain that the stomach is overloaded; the tube may evacuate two or three pints of dark fluid. There are times when it is necessary to wash the stomach repeatedly. In such cases I have found great advantage from the Jutte tube passed through the nose. The tube is very small, weighted at the end; it is easily slipped down the nostril and then swallowed. It may lie in the stomach for days, and the evacuation of fluid may be hastened by the application of a syringe to the other end. One great advantage of it is that the patient may drink copiously while the tube lies in the stomach. This is a very great relief to the patient, and the excess of fluid trickles away by the tube. As Matas has shown, in cases of high fever, iced water given generously causes the stomach to act as an icebag conveniently placed beneath the heart and over the aorta and vena cava. I have found the greatest help from this tube on several occasions.

CONCLUSION.

My thesis, then, to-day is one with which all will agree: it is that surgery is not only a question of operating. The surgeon in the last generation has had immense and unprecedented opportunity for research. Of these he has not failed to avail himself. He has not only brought relief to countless numbers of patients, but his investigations have created new knowledge, and have corrected old knowledge, as to the causes and conditions of disease. He has become very expert as a craftsman. But more than craftsmanship is needed. It is now his duty to concern himself with all relevant inquiries as to the condition of his patient before operation, to change those conditions to his patient's advantage, and to control his patient after operation, in order that the safety and the permanent success of his operation may be ensured. I foresee, therefore, a change, not only in the aspirations and in the labour of the surgeon, but in the methods by which he is trained for his task. In my day far too much time was spent in anatomy, and a needlessly intricate knowledge of some of its branches was required of us. The years of training might now be profitably spent in learning more of physiology, biochemistry, pathology, and in saturating the surgeon in his plastic years with the faith and the practice of the religion of research. The science of surgery in days to come will be advanced by men trained in the methods and imbued with the spirit of experimental research, though it will no doubt continue to be practised to their profit by those who are merely craftsmen. The surgeon is not simply the tool of other minds; he is not merely required to carry out the mechanical and routine details of a procedure the necessity for which, and the plan of which, others have decided. A life is entrusted to his hands. It is for him to safeguard it. It is he who must finally decide when surgical treatment is needed, and what shall be its scope and application. It is he who must take pains so to prepare or to rehabilitate his patient that the anxieties, the discomforts, and the perils shall fall as lightly as possible upon one who at the moment is perhaps less than ever able to bear them. The surgeon may in some degree share his responsibilities with others, but the chief responsibility must always lie with him, and being his must be exercised not only during the operation but also before, perhaps long before, and also after, perhaps long after, the operation is performed. The operation itself is but one incident, no doubt the most dramatic, yet still only one in the long series of events which must stretch between illness and recovery. The patient, passing through the deep waters, may find them chill and bitter, but the thought of our labour in his service, when the toilsome days are ended, will lie as a glowing coal at his heart.

An Address

ON THE AIMS AND METHODS OF HEALTH EDUCATION.

Delivered before the St. Pancras Division of the British Medical Association on Oct. 12th

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[AFTER a few preliminary remarks in which he pointed out that he was speaking as a private individual and not as the champion or mouthpiece of any society or association, Sir Thomas Horder continued:—]

Let me first of all dispose briefly of certain aspects of health education with which I shall not be much concerned, partly because they lie outside the actual controversy which has arisen in connexion with the subject and partly because they are being already dealt with more or less satisfactorily. There are three of these, and they seem at least to rest upon sound bases, capable of uninterrupted expansion. Public health education is one of them, industrial health propaganda is another, and I shall assume that instruction of the citizen when he is sick, as how best he can prevent himself becoming sick again, is provided for by the doctor who attends him. Even if this last assumption be too large the opportunity and the medium for health knowledge are forthcoming as the result of personal contact of patient and doctor, so that if there be the will to keep healthy on the part of the patient, and some desire to be helpful on the part of the doctor, all should go well.

There is, of course, a good deal of overlapping of public health and industrial health education on the one hand and personal hygiene instructions on the other. Inasmuch as the best part of public health is preventive medicine, as Sir George Newman so constantly reminds us, the Ministry of Health and its army of medical officers of health are, by their educational propaganda, doing a great deal for the personal hygiene of the individual citizen. Reciprocally, and here again Sir George Newman has, in his recent oration before the Hunterian Society, and in his own illuminating way, pointed this moral—the practitioner and the patient form a field of investigation and experience which, properly used, bring valuable material to the study of public health. Education in industrial medicine is a new departure, perhaps a little overdue, but full of great promise. This, too, must inevitably make a large and valuable contribution to individual health. By adding the stimulus of slight coercion many people may be induced to overcome the indifference which they manifest on the subject of health so long as they seem to be healthy. If preference and advancement go, other things being equal, to those employees whose health reports are best as the result of following the advice of the doctor acting on the firm's behalf, thus avoiding illness, this will act as a strong inducement to attend to the instruction given.

My chief concern in this address is not with these three aspects of health education so much as with health education as it affects the individual citizen in a state of relative health and efficiency. Is it desirable that we should give him information on health matters; if so, what sort of information should we give him, who should be responsible for it, and through what medium should it be given?

1. IS INFORMATION ON HEALTH MATTERS DESIRABLE?

There seems to be a general consensus of opinion that it is desirable. Even if some folk are inclined to doubt the value to the public of any instruction on matters of personal hygiene, the public has decided that it wants health talk and means to get it. How much it wants instruction is doubtful; that it wants the health "story" is certain. We must distinguish between the "story," information, and instruction; I think the demand is roughly in that order. Judging by the number of health articles and the frequency of discussions on health topics in the newspapers, there seems to be a veritable lust for news of this kind. The reader wants to hear about his lungs and his liver, about the diseases that he has himself had, or that his friends have, and still more about the diseases that he fears to get. There is no difference between popular subjects of conversation and subjects dealt with in the popular newspapers, and what subjects are more popular in conversation than health and disease? The man in the street likes to read about the latest cure for cancer, even though he has read of others, equally revolutionary, only a week ago. He loves to hear about the cure for tuberculosis which the profession, through ignorance or jealousy, refuses to use, and stop consumption once and for all. And how, from lack of funds and encouragement, the discoverer of the cure languishes in obscurity in a foreign land, surrounded by a few faithful followers whose enthusiastic support is wholly disinterested, yet entirely ineffective. He also likes to know about doctors and the queer ways they have, which his paper tells him are called "medical etiquette"; about their differences; about the disgraceful manner in which they ostracise the unqualified man who is so much more clever than they are that they won't allow him to get qualified, much as he wants to, so that he may place his great gifts at the service of the public. He will want to know what happens at this meeting, and will read with interest any references to myself as one of the die-hards or reactionaries of the profession. I don't think we ought to grudge him any of these things, since the intelligent reader is fully aware that the view taken is determined by the policy of the paper at the time of publication, there is no harm done. Even editorial grievances against the profession in general or against its official bodies in particular should not be objected to.

2. WHAT INFORMATION IS DESIRABLE?

When we turn from gossip and scandal to information—genuine news—I think we ought to take a large view of our opportunities, nay, I will say of our duties, remembering that we must succeed in getting the public interested, and in getting it to realise that health is its affair much more than it is the doctor's affair, before we can hope to arouse its attention to specific instructions. In these matters the public has grown up a good deal and is able to understand much about science and its applications. I would encourage the giving of information on all things connected with health and disease. Such information might include the history of medicine; the meaning of research, with illustrations of the patience, training, and persistence required by those engaged in it; how discoveries come, slowly and painfully; the value of comparative pathology and therapeutics in animals and in plants; and, from time to time, précis of definite and established advances and their bearing upon practice.

So much for gossip and information. What ought we to offer the public by way of instruction upon how to be fit and keep fit? This matter seems simple enough to some, but I must confess it seems very difficult to me. That may be because I am not an apostle of any doctrine that I have an itch to preach, and because I know from experience that health is an adjustment of so many factors, having quite different values in different individuals, that it seems to me entirely unlikely that particular prescriptions can ever be universally useful. I therefore think that maxims drawn up for guidance in personal hygiene should be few and brief, embodying general principles and avoiding particulars. How can they deal in particulars with any hope of success since they go to all and sundry, to the young and to the old, to the fat and to the lean, to the blonde and to the brunette, to the tall and to the short, to the phlegmatic and to the sanguine, to the asthenic and to the sthenic? If I tell everybody to eat bran and raw vegetables what of the people with flatulent colons? If I say that it is good for all persons to

secure at least two actions of the bowels daily, what of the many people who are always at their best when, as judged by this standard, they are a little constipated?

A fallacy underlying much personal health instruction is that the ideas upon which the maxims are based are born of the advice given with success to ill persons. What is found to be good treatment for the patient, or for the person who is discovered to have some morbid tendency, is assumed to be good for those who are well.

I do not think instructions to the public on health matters should aim at embodying the latest theories in pathology or in therapeutics. Rather do I think that such instruction should always be kept high and dry from theories, however attractive. This requires an exercise of forbearance not possible with all of us, a reflection which leads me naturally to my next question.

3. WHO SHALL BE RESPONSIBLE FOR THE INFORMATION?

For the gossip and the "story," as already said, we have, as doctor, no reponsibility. That rests with the editor and the proprietor of the journal publishing them. For the news I suggest that the medical journalist and "our medical correspondent" who is, of course, chosen *because* he is a journalist, are the best persons to do the writing. But I think the interest of the public is best served by all such articles and paragraphs, and books also, being controlled by experts whenever they deal with actual diseases and their treatments. This would test the bona fides of those newspapers which claim that they are really desirous of giving their readers reliable information. The experts at the Ministry of Health would, I am sure, be willing to "vet" such articles. But the public is chary of Government departments and officials in things like these. The Federation of Medical and Allied Services already does something of the kind through its panel of experts. It should not be difficult to arrange some even more representative body the names of whose personnel might be published from time to time—but not too often!—so as to assure the public that it was a competent body for the purpose in hand. Laymen should, I think, sit on this committee. I favour the presence of laymen on all councils and committees that have to do with health questions and the public. I have had too much experience of their great help in this capacity to have the least doubt on the point.

When we come to actual matters of health instruction—the preparation of these maxims, for example, that I spoke of—I am quite sure that control by some responsible body is essential to the public interest. The laymen would naturally leave these technical points to their medical colleagues. I say naturally because it is surely a glaring anomaly that a layman should write articles and books on technical medical subjects under the ægis of a doctor or a mixed health committee. This seems to me to be identical with the offence known as "covering," an evil that we fondly supposed was dead.

The work of a body such as I have suggested would prevent glaring discrepancies in health instruction. I have had sent to me what I regard as some very excellent pamphlets on health instruction, and some that I regard as not so excellent. Many of them would, in my estimation, improve greatly by a little editing and, as I suggested earlier, by the elimination of non-essentials. The writers' craving for being "up to date" lowers the value of several. Here, for example, is one on "Cancer," with a footnote referring to the "first results" of certain researches which were announced "whilst the leaflet is in the press." Who writes these leaflets? In the great majority of cases we are not told; no doubt this omission is due, in most instances, to a desire to conform to the tradition about avoiding publicity. In others it is probably due to the fact that the writer is not a qualified practitioner and modestly suppresses the fact. But would not the value of this form of propaganda be increased if the public knew that the leaflets had passed through some sort of clearing house, and this fact were attested? Since these leaflets are increasing very rapidly the point is not without importance.

The individual medical man can never, so it seems to me, be a safe teacher of health maxims to the public. Nor should he take upon himself this great responsibility. Which of us, after all, is quite free from obsessions? And whose obsession lasts out even a generation? Be as watchful about this as we may, if we really have the public interest at heart we ought not to risk stamping the mark of our particular bent of mind and training and experience upon a matter so vital as this. And this danger is not necessarily avoided if we work through, or with, a committee, unless we are very catholic in the choice of our colleagues. We ought to be careful that we do not choose those who merely reflect our own ideas, or the trouble will be multiplied. So much is this the case that it is quite easy to forecast what health maxims will emanate from any committee if we know that they have come together because they hold the same views. These views must necessarily activate all their work. I do not propose to criticise any particular health society, not even the latest addition to these useful bodies. It should be quite apparent to all of us who follow such movements that the policy of this new body is not yet settled. This is unfortunate, because in the process of finding a policy the public may suffer. I do not think this same society has yet decided if it is in the public interest that inspired laymen should write technical articles under cover of their medical colleagues. And the relation that it bears to existing official bodies has not yet been defined—to the General Medical Council, for example. In April last the President of the society stated, I am told, that "the relation of the society to the General Medical Council is one of acute antagonism." A week ago we were told, I believe, that "the society has never come into conflict with the General Medical Council, with whose functions it is in the closest sympathy, and for which it has the greatest reverence and respect." Until this body has found its bearings I was content to make such criticisms as I had to the President privately. But my name has unfortunately been coupled with that of a critic whose strictures it has, perhaps not unreasonably, resented, and, further, I have been accused of participating in "stage management" in connexion with this meeting. It looks as though the society anticipated that I should criticise it and desired to "get a blow in first." Perhaps I ought to accept this sign of nervousness as a delicate compliment. However, I have received very generous apologies from the President and from both the secretaries of the society; but as the error was committed publicly I take this opportunity of issuing a disclaimer.

I now turn to my fourth question.

4. THROUGH WHAT CHANNELS AND BY WHAT METHODS SHALL HEALTH EDUCATION BE GIVEN?

In reply I would say first of all that the channels can be neither too numerous nor too powerful, provided the material be properly selected and the mode of presentation be not open to question. Already the channels are many and they tend to increase—the press, books, the Ministry of Health, "health weeks" in large provincial centres, the approved societies, health societies, the film, and broadcasting—a goodly array. I have already alluded in several places to the lay press. It is certainly the most powerful medium we possess for instructing the public on health matters. We must do our utmost to secure the coöperation of the proprietors and editors of those journals that influence the thinking public; their help is paramount. We need not despair of securing their assistance because, reading the placards on the backs of the 'buses, we find it difficult to believe that some newspapers will care much about printing health information of the orthodox kind. There isn't anything very "amazing" or "astounding" or savouring of a "shocking revelation" about exhorta-

tions to the citizen to clean his teeth, or to eat more vegetables, or even to "open that window—cover that food—kill that fly." Fortunately there are other journals. Even so, the iteration of such maxims as these must needs pall, and that rather quickly; it would soon develop into what an editor friend of mine terms "writing round the moon." And yet if we let the individual doctor loose the editor will quickly pick the man who has (for him) two assets—a journalistic style and a flair for peculiar views on pathology or treatment. The very qualities that damn him in our eyes render him a blessed acquisition in the eyes of the editor. In the words of the poet, "Who can do a thing, will not; and who would do it, cannot." What we should like the editor to do is to pick the same sort of man that he picks when he is ill, because we must remember, and the fact is pertinent, that the editor's doctor is not a publicist, nor does he hold peculiar views; he is just an ordinary practitioner like ourselves; he doesn't know the exact cause of cancer. If we yield on the gossip and the "story" (and I have yielded) the editor may be inclined to meet us on the instruction question, and accept control by the committee I visualised. We might have two or three editors on the committee. Anyway, we might have a conference with them on the subject.

What is the objection to such a method of controlling medical instruction as that which I am advocating? I can only think of one. It would probably be advanced that the publicity committee is a sort of medical hierarchy and that certain individuals who have the itch to write might not—and probably would not—be nominated to sit upon the board. But their effusions would in all likelihood get to the press all the same. The important point is that there would be the chance of an authoritative "health column," reading which the thinking subscriber to the journal might know that what it contained was endorsed by the censoring body. But the lay press must not clamour for the signed article by men in active practice. They will get it, they do get it, but they should leave it to the good taste of the doctor to refrain if he chooses. In proportion as the lay press succeeds in making us good journalists it will leave us bad doctors.

A correspondent—I wish his telegraphic address were not the name of a common disease—reminds me that an ex-Lord Chancellor writes much on many questions and that the Primate and the Dean of St. Paul's do likewise. Why not medical men, he asks? Waving the consideration that medicine should be permitted to aim at a higher standard of taste than the law and the church if it so desires, I can only reply to the question by suggesting that the conditions at the bedside and in the consulting-room are different from those of the courts and of the cathedral. It may be that the patient's jealous concern for his body weighs more with him than it does in respect of his honour or his soul; perhaps he knows that all three of these are often laid somewhat bare before the doctor's gaze. This being so, he feels that a flair for publicity is incompatible with that capacity for silence which patients have a right to demand from their doctor. It is essential to his proper treatment that we give him a complete sense of security. Considerations like these bring us, or so I believe, to the very crux of this publicity business, and I am saying how the matter appeals to me. The first objection to publicity on the part of members of our profession concerns the psychology of the patient, as just dealt with. The second objection concerns efficiency in relation to his diagnosis and treatment.

When a man falls sick what he needs are the care and skill and intelligent sympathy of a good doctor. He does not want a publicist to give him medical news or discuss a favourite theory or to put his own case before him with that "pep" which editors love to secure for their readers. If his disease be obscure, or be thought to be desperate, and his doctor considers it is in his interest that the doubtful points in his case should be hammered out—as they only can be with benefit—in technical language on the anvil of another doctor's mind, what the patient needs is a consultant having special experience of the type of disease in question. Again, if operative treatment seems necessary, the patient's recovery may turn upon the choice of a surgeon whose facility and technique in the particular type of procedure demanded by the case are well known to the doctor.

Now if the sick man, or his friends, be led to choose the doctor, or the consultant, or the surgeon, from any other reason than his known merits in relation to the particular functions he is required to fulfil, it is unlikely that the patient will get the best attention which the profession can offer him. If he argues that because Dr. or Mr. So-and-So's name is much "before the public," therefore he must be a good man, he may commit a very grave error. It is in order to save him from this error that publicity on the part of medical men must be avoided as far as possible. I would almost go so far as to say that the sick man may quite safely conclude that a doctor's capacity is likely to be in inverse ratio to the number of times his name appears in the lay press. No doubt there are some exceptions to this rule, as to many others; this meeting having earned a good deal of unenviable publicity already, I may say that I hope there *are* some exceptions. I would myself yield to the innumerable invitations, cajolings, compliments, threats almost, of editors and newspaper proprietors, and write signed articles to the press if I did not fear that I might thereby lose what I very much value, indeed, if I may be personal, what I value most in life, the confidence of my colleagues and their patients.

That is how I read the tradition of our profession in respect of this matter. Those who do not pause to think upon what grounds it is based, or who stand to gain an immediate advantage by its sacrifice, would have us depart from it. But I do not think that we shall depart from it. It is very ancient, dating from pagan times. This, of itself, is no reason for adhering to it, but since patients have the same fears and scruples as they had when Hippocrates practised medicine, we shall need greater inducements than any so far advanced before we break with it. As a friend of mine has epigrammatically put it: Shall our traditions be butchered to make a pressman's holiday.

If our friends of the press would accept these facts as our reasons against seeking publicity rather than suppose that we are only kept from this by fears of the General Medical Council and its punitive powers, they would understand us much better, besides paying us a better compliment. Publicity, as they well know, is not the same thing as prestige. It is almost impossible to acquire prestige and avoid some publicity. But it is possible to enjoy much publicity and still lack prestige. Nor does writing articles to the press necessarily bring patients. Amongst those letters to which I referred in my opening remarks was one from a doctor who told me that he had, in the course of the past 20 years, written close on 2300 signed articles in the lay press, yet, he says, "during that 20 years I have not succeeded in getting one single patient—desirous or actual—as a consequence (direct or indirect)." I don't think he meant to use the word "succeeded," but he did. Now, I have done better than that because, though I have never written a medical article in the lay press, I *have* had one patient, and I nearly had a second, as the result of being quoted in the newspapers. The patient I *did* get was brought to me only the other day by his doctor; he was suffering from hypochondriasis, and he had read something I had said about the bad effects of worry upon health. The patient I *nearly* got was, I fear, suffering from acute alcoholism. It was a night call on the telephone, to be exact it was 2.30 on a Sunday morning. When I was sufficiently awake to know what was being said the other end I found I was being addressed by the sergeant on duty at the Harrow-road police station. He had a man there charged with driving a car to the danger of the public whilst drunk—"very drunk" the sergeant said—and this

man wanted me to come up and testify to his sobriety. I naturally asked why he wanted *me*. It seems that on being charged the man denied that he was under the influence of liquor and, taking a newspaper cutting out of his waistcoat pocket, he pointed to it and said, "this is the doctor I want to examine me." The cutting (I regret to say it was the *Times*) quoted me as having said that I knew of no experiments, scientifically designed, which proved that the taking of alcoholic beverages in moderation was injurious to health. I acquiesced in the sergeant's suggestion that he should follow his usual custom and send for the police surgeon, but it is obvious that I could have had this second patient also had I wished.

But, speaking seriously, I agree with my correspondent when he says that the advertising value of signed articles in the lay press is over-estimated, always supposing them to be free from suggestions of special knowledge or unique skill. Despite the memorandum recently issued by the registrar of the G.M.C., it still seems to be widely thought that the Council forbids the writing of such articles, whereas it does not. The memorandum states "that the publication in the press of articles on medical subjects by medical practitioners has not been condemned by the Council, unless it has been proved that the articles were written, whether directly or indirectly, for the purpose of obtaining patients or promoting a practitioners's professional advantage."

Articles of this latter class are certainly discreditable to the profession and contrary to the public interest, for they conform to the methods of the unqualified practitioner. It was to enable the public to tell the qualified from the unqualified practitioner that the Act which brought the G.M.C. into being was passed, and it is therefore incumbent upon this statutory body to keep his distinction clear. The Act was clearly introduced for the benefit of those of the public who wished to know who was trained and had received a diploma, and who was not, for there were apparently some people in 1858 who considered this to be a point of importance. The preamble of the Act is brevity itself: "Whereas it is expedient that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners: Be it therefore enacted . . ." There are always some persons who want to have their cake and eat it too. If we are on the Register we enjoy—or so it is supposed—certain advantages, but we are subject to disciplinary control. If we are not on the Register there is in this country no control whatever; the unregistered practitioner enjoys perfect freedom; he need not be even a gentleman. But we must choose one or the other; we must make up our minds what we want. *My* complaint against the General Medical Council is not its stringency, but its laxity. I know this is no fault of the Council, but the fault of its reference as laid down by law. If it were a vigilance body and acted on its own initiative it would surely round up a good many persons who succeed in driving a carriage and pair through those offences which the warning notice takes exception to. The Council is not only lax, it is also complaisant. Some time ago a doctor whose name had been erased from the Register after frequent and repeated efforts to attain this object wanted to get on it again because, as he confessed to me, the erasure hadn't brought him the success he anticipated. So he wrote an apology and his name was put back. He is still dissatisfied, though why I cannot make out from his long and rambling letters, for he was one of those who thought I should be helped by a statement of his views on this subject. There are seemingly some practitioners to-day who trail their coats and hope the Council will give them the advertisement of being struck off from the Register. They forget that one of the functions of the Council is to check advertisement and not to be a party to it.

To try to correct the many glaring misconceptions about the General Medical Council is outside the scope of my remarks. I only mention them because they are shared by many medical men with the public. There was a recent clamour to have laymen sitting on the Council, and doctors wrote to the press joining in the clamour. They ought to have known that there is nothing to prevent laymen being on the Council; indeed, of the 38 members no less than 23—more than half—may be laymen.

To return to the channels of dissemination of health instruction, time will not permit me to speak of the value of "health weeks," of health societies, and especially—as I should like—of the great help we can derive from broadcasting. I have not been unaware that I should be expected to deal with the vexed question of the lay press, and what I have said could not be further condensed without risking obscurity. But I have purposely left until now the mention of a medium excelling all of these just mentioned in potential value if it can be properly utilised, and that is the doctor himself. Personal contact of doctor and citizen is the best answer to the question "how to keep well." In this way and only in this way can the individual needs of the public be allowed for in health instruction. I heartily endorse Sir John Robertson when he says that "it is part of the duty of every medical practitioner to teach in such a way as will give information to his patients about the prevention of illness in addition to the cure of illness." Health talks and lectures by doctors working under the National Insurance Act to the patients on their panel are not only ethically correct, they are encouraged by responsible bodies and the machinery for developing this side of the doctor's functions is already available. Such duties cannot, of course, be gratuitous, and those men who are willing and qualified to carry out this valuable work should be adequately subsidised. These talks and lectures might be assisted by a series of leaflets properly controlled, perhaps provided by the Ministry, embodying the chief points dealt with.

Faced with all this health propaganda, it is to be hoped that the public will not take itself, nor us, too seriously. This is a danger we must try to avoid. There is an unattractive drabness about most of the present health advice, a sombre aceticism which, though doubtless of service both physically and medically, seems to me sadly to need relief. It would be a pity if the savour went out of life at the same time as the savoury things are taken from our diet. I am hopeful that it may not, even if some people do become austere and valetudinarian before their time. There is an inertia in the mass, and sometimes a rebel spirit which, though wept over by the health apostle, is not without its saving grace. A father writes to one of last month's health journals to say that in the council school of his town they have formed a "health brigade" and his little daughter Joyce, aged 9, is the captain. "My younger daughter," he adds, "says she will not join it, because she likes sweets." Some coercion appears to have been brought to bear upon this stout little protestant, for the letter proceeds to state that she had put her name to the bond, one of the rules of which was "to buy fruit instead of sweets." Conquered but unconvinced we may picture her, sitting apart, satisfying her natural craving for sugar in secret. The editor's note, whilst wishing good luck to the brigade, says, "this is the spirit we want to see in the rising generation." Of course he refers to the spirit of Joyce, the captain, aged 9. But I am glad to believe that the younger daughter is going to give health societies a lot to think about.

NORTH RIDING INFIRMARY.—The ordinary income for the half year ended in June last was £3000, compared with £4450 during the corresponding six months of last year. The loss of income is attributed entirely to the coal dispute.

AN INDIAN MILITARY HOSPITAL.—Last month the King of Nepal opened the Tribhuana-Chandra Military Hospital at Katmandu, which has been erected by the Maharajah of Nepal, the Hereditary Prime Minister, at a cost of £30,000, as a memorial to the Gurkha troops who served in the Great War. It has 64 beds, disposed in six wards of eight beds each for soldiers, 12 rooms with one bed each for officers, and one ward of four beds for isolation cases. Each ward is complete in itself, with kitchen, sun-porch, day-room, linen closet, and bath-room.

THE TREATMENT OF ANGINAL PAIN AND RAISED BLOOD PRESSURE BY DIATHERMY.*

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DIATHERMY can no longer be looked upon as an experimental method in treatment, but, although widely employed, its scope is not yet clearly defined, and this communication is made with the object of presenting the results of its application in a series of eight patients suffering from anginal pain and in six with marked hypertension, in one of whom intermittent claudication was the dominant symptom.

Diathermy is a form of treatment in which heat is generated in the tissues by the passage through them of high-frequency currents. It is essentially different from the warming of a part by the application of heat to the skin. Human tissues are conductors of an electric current, but they are conductors with a high resistance, and consequently the passage of an electric current through them generates heat.

Besides its surgical applications, diathermy has been used in a large variety of medical cases, as, for example, in all forms of neuritis, neuralgic pain, hæmorrhoids, gonorrhœa, paralysis agitans, cardiovascular disease, arthritis, and other disabilities. Dr. E. P. Cumberbatch has written fully on this subject, and Dr. F. H. Humphris speaks optimistically of its effects in hyperpiesia, where it causes a relaxation of the vessels. But, as the latter points out, there appears to be more than that. The patients themselves feel materially better, brighter, and more full of energy.

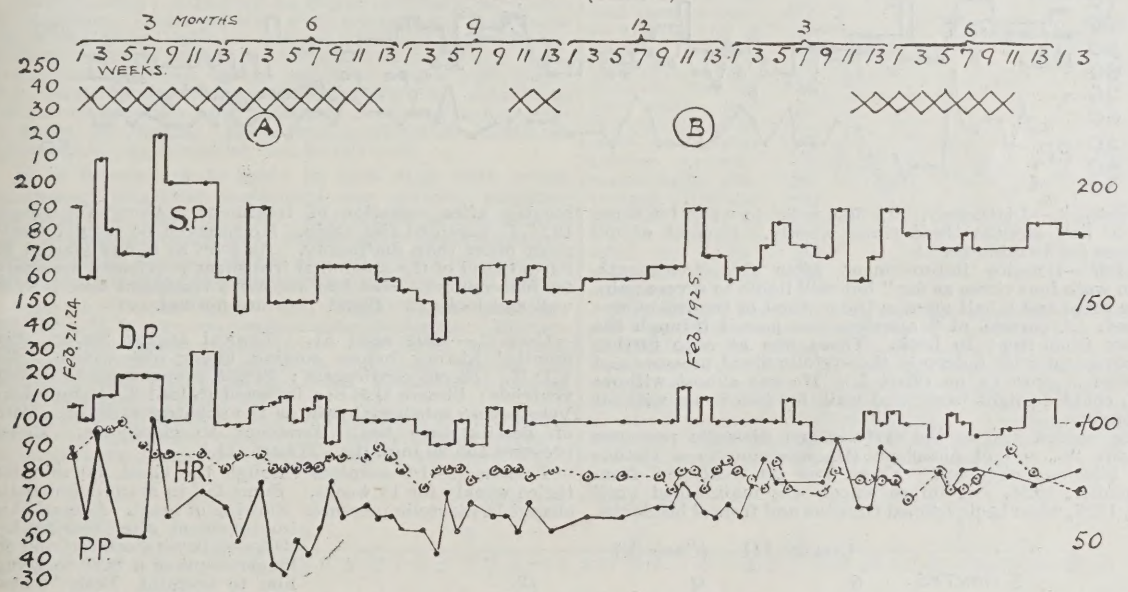
Anyone who has had personal experience of the effects of diathermy knows how the tissues through which the current is passing, slowly become warm until there is an actual sensation of heat, first locally, then the whole body becomes recognisably hotter, and sometimes frank sweating occurs.

Diathermy in Circulatory Disorders.

In February, 1912, Nagelschmidt published his classical paper in the *Roentgen Ray Archives* on the diathermic treatment of circulatory disorders, relating numerous cases treated by diathermy. Among these were cases of intermittent claudication, where the effect of suggestion could be fairly eliminated. The pathology of the condition is understood, and the clinical result of the change in the arteries is only too well known to the patient. Any prolonged or extra effort in the nature of walking produces a cramping pain in the foot and leg of such severity as to cause the patient to stop. The pain wears off gradually when the patient rests, only to return when walking is resumed.

The result of diathermy was dramatic. Walking no longer brought on a crippling cramp. The man who before treatment could only walk a few yards, after treatment walked miles with comfort. The application of diathermy restored the circulation to the legs, and the intermittent limp was no longer brought on by effort. This remarkable change, brought about by the action of diathermic currents on the arteries of the leg, is a strong inducement to attempt by like means to influence the circulation in other parts of the body. We applied the current to the chest, "through and through," in the hope that the coronary circulation might be improved, and also in order to determine how far the distress accompanying high blood pressure could be modified.

CHART I. (Case 1.)



The figures to the left of each chart represent the blood pressure in millimetres. The duration of the observations is indicated in weeks and months. S.P. = Systolic blood pressure. D.P. = Diastolic blood pressure. P.P. = Pulse pressure. H.R. = Heart-rate. The treatment is shown by a series of crosses just below the figures indicating the weeks.

For the last two years we have been observing the effects of diathermy on two groups of patients: 1. Cases of angina. 2. Cases of raised blood pressure with various associated symptoms.

This communication embodies the results of our investigations. Eleven of the patients have been under observation in the heart department of the Royal Infirmary over a considerable period, and records have been taken week by week of the fluctuations in blood pressure, both systolic and diastolic, and any changes in the general condition and symptoms have been noted.

The accompanying charts will enable the clinical course to be followed with ease.

The supervision of the administration of the diathermy has been carried out by our colleague

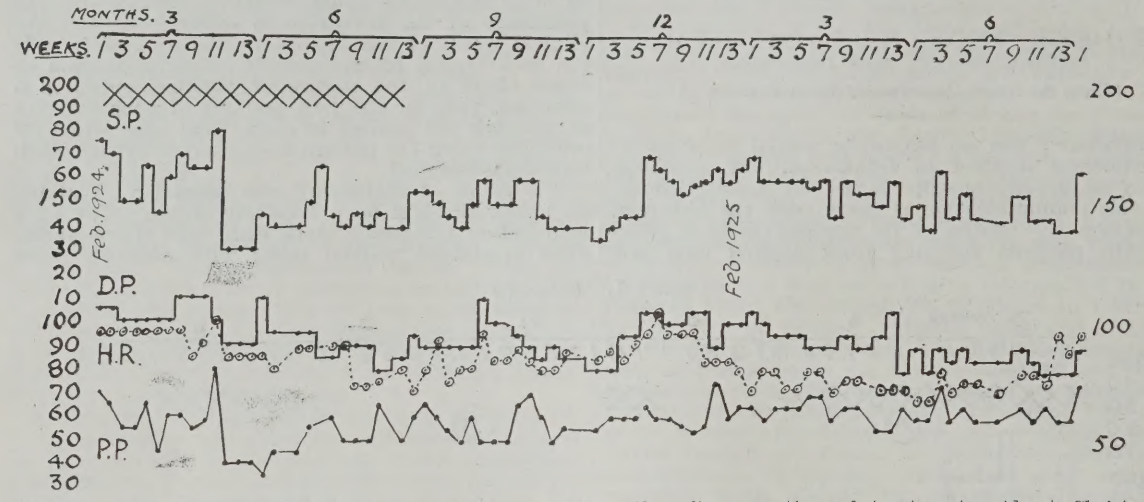
* An address delivered at University College, London.

at the Royal Infirmary, Dr. C. Beresford Alexander, to whom we are greatly indebted.

Clinical Records.

CASE 1.—Male aged 66. Angina minor, high blood pressure, 190/105 mm. Hg, and arterio-sclerosis. Electrocardiogram normal. Left ventricle plus. Gripping pain, substernal, on exertion. Dyspnœa moderate.

CHART II. (Case 2.)

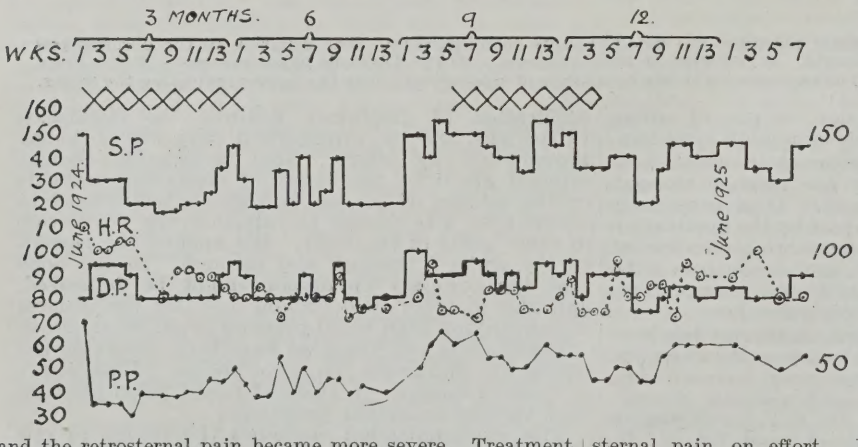


Treatment.—Diathermy. At first wrist to wrist for three and a half months three times weekly. Current of 0·9 ampères for 30 minutes.

Result.—Definite improvement after five treatments. "Can walk four times as far" but still liable to severe pain. After three and a half months the method of treatment was altered. A current of 2 ampères was passed through the thorax from front to back. There was at once further improvement with a drop in the systolic blood pressure and in pulse pressure (A on Chart I.). He was almost without pain, could do light work, and walk for two hours without discomfort.

The sudden rise in the systolic and diastolic pressures towards the end of his chart (B) was due to a riotous and hilarious week-end. There was no treatment from November, 1924, and improvement was maintained until May, 1925, when he developed tinnitus and frontal headache, and the retrosternal pain became more severe. Treatment was then resumed twice weekly. After some weeks symptoms were relieved and patient returned to work as an electrical fitter. Is keeping well. B.P. fairly constant; 180/100 mm. Hg. The last course of treatment, although relieving the symptoms, had little effect on blood pressure or heart-rate.

CHART III. (Case 3.)



CASE 2.—Male aged 70. Anginal pain. Six years' history, but pain was less severe at the time diathermy was commenced than it had been some years before. Dyspnœa on walking. Blood pressure 175/105 mm. Hg. Electrocardiogram: Left ventricle plus; T inverted in lead 1. This patient had been under observation and general treatment for some years before diathermy was administered. (Chart II.)

Treatment.—Through chest; 1·9 ampères 30 minutes, thrice weekly, followed by very definite improvement. "Looks younger and fitter. Walks without effort. Can play bowls for four to five hours with comfort, which he has not been able to do for years." Note the drop in systolic and diastolic blood pressure, maintained for four to five months after cessation of treatment. About Christmas, 1924, it began to rise again. He received no regular treatment other than diathermy. As soon as it was started he felt no need of the medicinal treatment previously necessary for his comfort. Has had no more treatment and is very well and looks it. Blood pressure normal.

CASE 3.—Male aged 51. Typical angina major. Six months' history before coming under observation. No V.D.H. Electrocardiogram: Slight preponderance of left ventricle; bizarre Q.R.S.; inverted P, lead 3. Symptoms: Very severe substernal pain on the slightest exertion. Pain on getting into bed. Tendency to glycosuria. Blood pressure 150/80 mm. Hg. (Chart III.)

Treatment.—1·5 ampères through the chest, 30 minutes thrice weekly for 14 weeks. Some fall in systolic but little change in diastolic pressure. Slowing of heart. Remarkable improvement after two weeks. "Can walk with comfort and no longer requires a taxi to bring him to hospital. Feels 'a new man.'" After six weeks' treatment "No pain, day or night; can walk much farther." Treatment was stopped for three and a half months, followed by some rise in blood pressure. He kept fairly well, but pain began to recur and treatment was resumed. Within a week after three treatments he was feeling considerably better. He still remains very well and looks it. Very rarely needs to take trinitrin; slight discomfort only on moderately severe exertion.

CASE 4.—Female aged 48. Angina minor with slight aortic regurgitation. Hypertension: 190/90 mm. Hg; H.R. 84. Electrocardiogram: Left ventricle plus. Gripping substernal pain on effort. Radiating to neck, lower jaw, and left arm. Smothering sensation in epigastrium. Dyspnœa on walking. No constant relationship to effort. W.R. ++. Diastolic bruit varies. Probably slight aortic lead. In 1919 had been operated on for gall-stones; gall-bladder not removed.

Treatment.—Diathermy: 0·6 ampères for 30 minutes thrice weekly, wrist to wrist. Result: Faintness while receiving treatment and refused further treatment. Afterwards gall-stone colic, but operation postponed. Diathermy caused fall in systolic and diastolic pressures with some general improvement. The systolic pressure fell from 190 mm. Hg to 160 and then to 155 mm. Hg, with a corre-

sponding fall in the diastolic pressure from 90 to 80 mm. Hg. This was maintained for some weeks after treatment ceased and then the pressures rose. The systolic pressure did not again reach 190 mm. Hg. She was put on antisyphilitic treatment, but she refused to continue attendance.

CASE 5.—Male aged 49. Hypertension: 210/130 mm. Hg. Albuminuria moderate. Electrocardiogram: Left ventricle plus; T. inverted in leads 1 and 2. Clinically: Pain in right side of the head. "Retrobulbar optic atrophy" right eye. Dyspnœa on exertion and general lassitude. (Chart IV.)

Treatment.—Diathermy, wrist to wrist, 0·9 ampères thrice weekly for five months. Resulting in a steady fall in systolic pressure and a rise in diastolic pressure. Improvement, clinically, began at once. He felt "done up" immediately after treatment; better next day. After two months' treatment could walk from the docks to the Royal Infirmary—at least two miles, and uphill. Ceased treatment and did not attend the clinic for 11 weeks. At the end of this time it was found that the pressure had risen to 230 mm. Hg. There was increased dyspnœa on exertion, but in other respects he was better than when he began treatment. He had several short attacks of cerebral claudication since January, 1925 (right arm and right side of face with loss of speech.) Steadily getting worse. Severe frontal headache.

October, 1925: Admitted to Royal Infirmary for course of diathermy. Improved after a few treatments. Headaches disappear during treatment and remain clear for some hours. Formerly were so severe as to make him weep with pain. Treatment six times weekly for three and a half weeks. B.P., no permanent change. Average 220/140; reduced to 190/135 immediately after treatment; returns to his usual in about two hours. There was considerable functional improvement, no headache, and he felt well.

It is interesting to note in this case that when treatment was first instituted the systolic pressure fell and the diastolic rose, with great improvement in the general condition, while later the treatment cleared away the headaches and added to his comfort without modifying the pressure except for a few hours.

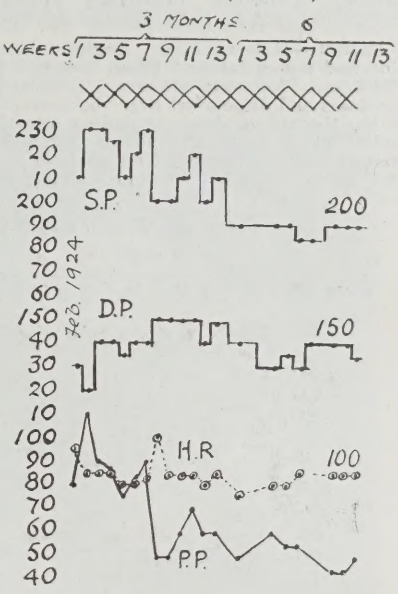
CASE 6.—Female aged 70. High blood pressure: 200/100; H.R. 80; no marked arterio-sclerosis. Electrocardiogram normal. Clinically: For three years had suffered from numbness of hands and arms, making her unable to work. Limbs always cold. Sensation of fullness in the abdomen. (Chart V.)

Treatment.—Diathermy 0·6 to 0·7 ampères, wrist to wrist. Result: Remarkable change in cardiovascular picture. Blood pressure returns to normal averaging 130 systolic and 90 diastolic; later 80 diastolic. Heart-rate lowered. Clinically: Improvement immediate and was maintained. She became *warm* and has remained warm. No longer any numbness of hands and arms. Although 70 she is able to get up at 6.30 A.M. and do her house work (including the weekly washing) without discomfort. Had previously done *no* work for three years. Still receives treatment twice weekly and is very well; aged 72. Blood pressure 128/78 mm. Hg.

CASE 7.—Male aged 47. Chronic interstitial nephritis. Extreme hypertension. 245/140; H.R., 96; arterio-sclerosis. Low urea concentration; N.P.N. 34 mg. per cent. Electrocardiogram: Left ventricle plus; T inverted, lead 1; Premature beats—auricular and ventricular. Clinically: Condition most unsatisfactory. Palpitation and dyspnœa on very slight exertion. Precordial pain. Huge heart. No. V.D.H.

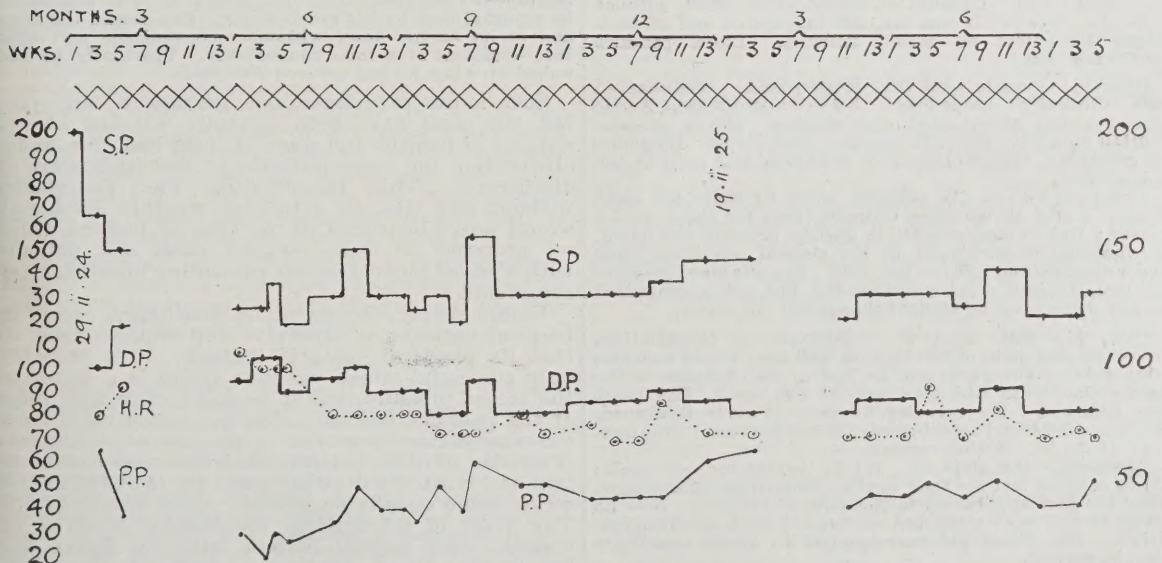
Treatment.—Diathermy, 0·9 ampères 30 minutes thrice weekly, wrist to wrist. Result: After two weeks' treatment felt much better and stronger. There was less palpitation and he was sleeping better. Each treatment caused a sense of exhaustion for 24 hours. After five weeks he felt so well that he went to Chester for a day's fishing (Oct. 4th, 1924). Walked four to five miles and *never recovered*, in spite of several further treatments with diathermy. Systolic pressure rose to 240 after the effort and he developed *pulsus alternans*.

CHART IV. (Case 5.)



The day at Chester exhausted him greatly, but he did not break down until a week later, when the pulse became alternating, the strongest beats being at 240 and the weaker at about 210. He then got steadily worse and was admitted to hospital in a month's time. When admitted the distress was considerable. There was an ominous fall in blood pressure—170/130 mm. Hg. Further treatment with diathermy was ineffectual and at his own request he was discharged. He died a few days later.

CHART V. (Case 6.)



CASE 8.—Female aged 52. Hypertension: 240/160; probably menopausal. Urea concentration below average; N.P.N. 33 mg. per cent. Electrocardiogram: Left ventricle +; inverted T in lead 3. Clinically: Shortness of breath on exertion. Flushings; flatulence; pain over left costal margin; palpitation. A miserable and querulous patient.

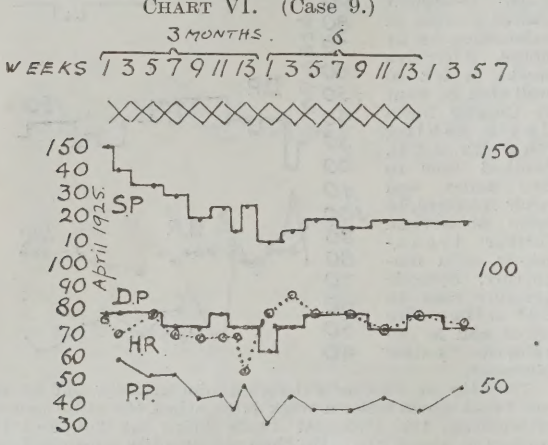
Treatment.—0·5 to 0·6 ampères; wrists; thrice weekly for three months. After that irregularly, because it caused such profuse sweating. Result: At first some improvement.

Felt "more sure of herself" and less pain. Latterly not much pain. There was a drop in systolic pressure from 240 to 190 mm. Hg during first four months and again on resumption of treatment. She had a further short course of diathermy in October, 1925, for two to three weeks, but gave it up after some improvement owing to sweating, chills, and bronchitis.

In this patient the result of treatment was unsatisfactory, although diathermy appeared to have a definite action in reducing the systolic pressure.

CASE 9.—Male aged 58. Angina minor. Aortic obstruction and regurgitation. Blood pressure 150/80; H.R., 80. Thickened, tortuous arteries. Clinically: Complains of tightness and discomfort over the sternum going on to pain in the throat, on effort, extending into the left upper arm, ending at or below the elbow. Some shortness of breath on exertion. His chest feels as if it were being gripped, and he is compelled to stop walking in order to obtain relief. (Chart VI.)

CHART VI. (Case 9.)



Treatment.—1·5 ampères for 30 minutes, six days weekly. Through the chest. Result: Dramatic improvement at once. Immediately after treatment he feels so well that he states he "could climb the side of a house." Is able to walk up hills without discomfort. Treatment, two days weekly, was continued until the end of September.

Has remained very well since he stopped treatment four weeks ago. Capable of considerable effort without pain—i.e., repairs his own car, lifts luggage on and off taxi. Slight discomfort on severe exertion. Blood pressure 120/75 mm. Hg.

CASE 10.—Female aged 46. Hyperpiesia. Well-marked case. Clinically: Large heart. No valvular disease. Aortic second sound accentuated and ringing. Blood pressure 280/150 mm. Hg. H.R., 72 regular. Symptoms: Dyspnœa on exertion. General feeling of weakness and pain in the epigastrium.

Treatment.—First 0·5 ampères wrist to wrist for eight weeks. Later 1·5 ampères through chest for three weeks. Result: Only a moderate fall in systolic pressure was noted. No material improvement in her general condition while under observation. November, 1925: Systolic blood pressure 225 mm. Hg, indicating a further fall, but not accompanied by any corresponding clinical change for the better.

CASE 11.—Male aged 63. Intermittent claudication. Weakness and pain in the legs on walking; would come on after walking 100 yards and he had to stop because of the pain. The "use had gone out of his legs." His heart was enlarged. No valvular disease. Vessels thickened. Aortic second sound accentuated. Blood pressure 170/95 mm. Hg; H.R., 80. Action regular.

Treatment.—0·8 ampères: (1) To ankles for one week; (2) to soles of feet for four weeks. Improvement appeared after the first application to the soles of the feet. Now he walks as well as ever and has returned to work as an engine-driver. His blood pressure dropped to 140/80 mm. Hg—that is, normal.

CASE 12.—Male aged 67. Angina minor. Blood pressure 230/115. Heart-rate 90. Electrocardiogram: Q.R.S. bizarre lead 3. Symptoms: Three years ago began to suffer, on walking, from a peculiar sensation across the sternum more to the right than to the left, which radiates into both arms as far as the wrists, compels him to stop, and then disappears. Two years ago, on account of the distress, had to give up golf. Heart enlarged; no valvular disease. Arteries tortuous. Urine normal.

Treatment.—Three treatments of diathermy, 40 minutes' arm to arm. No drug medication. Diet restricted. Feb. 16th' 1924: Blood pressure 165/100 after third treatment. Nov. 21st' 1924: It had risen to 185/95. Marked improvement.

"I have just returned from Scotland fit and well. Since I first took that electric treatment I have never looked back. I have dieted myself as per your instructions, but have taken no medicine beyond aperients. I can now walk any distance at a brisk pace without having to stop and rest. Weight about 11 st. 3½ lb.—about 4 lb. down."

CASE 13.—Aged 68. March, 1924. Angina. Blood pressure 160/90; H.R., 112. Electrocardiogram normal. Symptoms: Suffers from numerous attacks of anginal pain. First troubled him definitely about Christmas, 1923, but became much worse by the beginning of March, 1924. Gripping submanubrial and substernal pain brought on by walking, especially on an incline. Relieved at once by standing still and by the eructation of wind. No dyspnœa. A dull numb ache extends down the left arm. It either follows or precedes the submanubrial pain. Heart moderately enlarged; no valvular disease. No change in aortic sounds.

Treatment.—He was put to bed for five weeks and treated with diuretin and nitro-glycerine, but the attacks persisted, as often as 10 to 20 in 24 hours, though they were less severe than formerly. April 27th, 1924: Blood pressure 150/90. H.R., 96. Diathermy given three times weekly through the chest; 1·5 ampères. May 6th: Five hours after fourth treatment the blood pressure was 120/80 mm. Hg. Attacks just as frequent but less severe. June 19th: Material improvement. Blood pressure 135/85. Number of attacks halved, average now six daily as against 12 daily, and the severity much less. Diathermy was given at regular intervals.

My last note is January, 1925, from the doctor in attendance. "Much better in every way. Blood pressure 120/85 mm. Hg."

CASE 14.—Male aged 60. Sept. 11th, 1924. Angina major. Blood pressure 165/95; H.R., 88. Electrocardiogram normal. Symptoms: Anginal pain came on with the slightest exertion, such as easy walking or playing billiards. Onset of pain gradual, gripping in character, radiating to inner left arm and mid-forearm. He had led a very strenuous life, but had been free from illness. Pain was first noticed about the spring of 1923, but had been worse in 1924. He consulted a physician and was put on orthodox treatment without benefit; in fact, the liability to attacks increased. Heart slightly enlarged; no valvular disease. Bromides and diuretin with a carminative and amyl nitrite had no effect.

Treatment.—Diathermy: Thrice weekly through the chest undoubtedly improved him, although for the first week of treatment he became worse. On one occasion he was very giddy the day following a rather long application of diathermy—40 minutes. Oct. 10th, 1924: After 12 treatments he reported that he felt much better. Can ascend the steps and stairs at his hotel without inconvenience and walk three-quarters of a mile comfortably. Previously he had pulled up when he had covered 100 yards.

Such is our experience, not perhaps a large one, but the cases have been carefully watched over a number of months and some of them had been under observation for years previous to the application of diathermy. This investigation was undertaken without any bias, to determine whether diathermy would prove beneficial in the type of patient which we proposed to treat—anginal cases and patients with a raised blood pressure presenting unsatisfactory symptoms.

Unfortunately, treatment by diathermy, except in hospital patients, is expensive and requires time, so that its practical value is limited. It is probably only successful where vascular spasm is a factor in the raised pressure, but it is noteworthy that some of the patients had not obtained much relief from the vasodilators previous to the use of diathermy. A number of other patients have been under observation and treated with diathermy not included in this series, some equally successful, others disappointing. Two cases of intermittent claudication received no benefit. One anginal patient failed to derive any benefit when the electrodes were applied to the wrists, but noted immediate improvement when they were placed on the front and back of the chest.

Conclusions.

Certain conclusions seem warranted:—

1. The treatment did no harm. There were a few instances in which diathermy produced temporary dizziness and faintness or caused excessive sweating,

but these were the most distressing manifestations noted.

2. Nearly every patient expressed himself as feeling considerably better. The three unsatisfactory cases were females: (4) a syphilitic heart with anginal pain; (8) a menopausal hypertension where the diathermy caused very considerable sweating; (10) a case of extreme hyperpiesia with dyspnœa and general exhaustion as the dominant symptoms.

3. The charts show that in a number of the patients there was not only an immediate effect on the blood pressure, but that this improvement tends to persist for a time. And even if the pressure tends to rise later, the subjective improvement often persists.

4. Apart from the subjective improvement and the alteration in blood pressure, the capacity for effort has noticeably increased, vide Cases 1, 2, 3, 5, 6, 9, 11, 12, 14. Pain and dyspnœa were undoubtedly much less readily induced. In other words, the area of cardiac response was greatly increased and the patients were enabled to live more normal lives.

IODIDE ERUPTION

AN UNUSUAL CASE.

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THE most common sign of cutaneous intolerance to halogen administration is a form of acne. It can usually be distinguished from the common variety by the absence of comedones and by a tendency to wander from the typical situations on face, chest, and back, to other parts of the trunk and to the limbs, where acne vulgaris is very seldom encountered. Rapid pustulation and the development of a congested mauve or purplish halo round the lesions may also serve to distinguish the medicinal eruption.

The granulomatous or tumour form of the eruption is rare and more commonly the result of bromide than iodide medication. The lesions appear rapidly either as pustules or purulent bullæ, with a predilection for the face and the extremities, frequently coalesce, and may then become papillomatous with a tendency to "fungate." Pain is slight or may be entirely wanting. Crusting and the discharge of a sticky yellowish pus from a number of points on the raised discoid lesions is a characteristic feature.

In addition to these two varieties of halogen eruption there are a bullous or pemphigoid and a type not unlike the manifestations of erythema multiforme. It must not be forgotten that the iodides may also produce catarrhal symptoms in the nose and throat with a tendency to œdema of the lids, while in some subjects the idiosyncrasy takes the form of pain in the joints, in the lower jaws, and in the long bones.

The following rare example of a granulomatous response to iodide of potassium was recommended for admission to the Royal Northern Hospital on June 28th by Dr. J. P. Hope, of N. Finchley.

History of the Case.

The patient, a married woman of 77, had been attending the out-patient department since April 13th for enlargement of the thyroid isthmus, and sepsis of the glands in the upper left cervical triangle. There were one or two small sinuses and several old scars which indicated the chronicity of the infection, and can be clearly seen in the accompanying photograph, overlying the thyroid gland and extending horizontally from right to left in the natural creases of the neck. The glandular enlargement is also apparent and is almost certainly the result of dental decay and oral sepsis, which was very severe.

The W.R. was negative. There was no history of any serious illness.

On the morning of June 24th the patient awoke with a swollen face and the lids so puffy that she could not open or see out of the right eye (the left eye was destroyed by an accident many years ago). She could, however, feel some blisters on the nose and cheeks. Two days later the swelling of the face had subsided sufficiently to permit of vision, and it was then apparent that the eruption on the face was assuming formidable proportions and that pustules were appearing on the backs of both hands, legs, and feet.

Characters of Eruption.—The facial appearance of the patient is depicted without any exaggeration (rather the reverse) by the photograph, which cannot, unfortunately, reproduce the dark red to purple colour of the raised, soft, fungating discoid lesions, the size of which may be gauged by comparison with the nose or orbit. All of them were slowly discharging a thick, grumous, sticky fluid which rapidly caused crusting and rendered dressings exceedingly difficult and tedious. On the extremities the lesions were pustular in type and showed no tendency to fungate. During the next two days in hospital fresh lesions appeared on the forehead, the right upper lid, and the scalp. At their

incipience these were of bullous type, but the contents were purulent and on rupture of the thin roof the granulomatous base rapidly proliferated, and in a few hours came to resemble the discoid mushroom-like character of the primary lesions on the face.

The mucous membranes were not affected at any time during the illness. The distribution, rapid evolution, and appearance of the eruption were, in my experience, consistent only with a halogen ætiology, and the urine was therefore submitted to Dr. P. O. Ellison (assistant pathologist to the hospital) with the suggestion that bromides might be present. These, however, could not be detected on repeated examination, although "traces" of iodide were found on two separate occasions. The urine was normal in other respects. The patient denied taking any medicine except that prescribed by Dr. Hope, and of that, she assured us, she had taken only two doses, both on June 21st. On inquiry Dr. Hope kindly informed me that this mixture contained iodide of potash, gr. 5 to oz. ½ of inf. gent. It therefore transpired that only 10 gr. of pot. iod. had been administered, and that the extensive eruption had supervened in three days. If the patient's assertions are believed the idiosyncrasy here present must surely be unique.

The treatment adopted was to utilise the "mass action" of sodium chloride originally suggested for bromism by Prof. U. J. Wile,[1] of Ann Arbor, Michigan, and elaborated by Stevenson.[2] The salt was given in gelatin-coated capsules in a dose of 10–20 gr. thrice daily after food. I was unable to convince myself that the administration of sodium chloride in this case had anything like the dramatic effect that it appears to exercise in cases of bromide eruption.[3] The patient made a slow but uneventful recovery, and

[1] Amer. Arch. Derm. and Syph., Nov. 6th, 1920.
[2] Ibid., Oct. 12th, 1925.
[3] Brit. Med. Jour., 1926, i., 372.

at the time of writing (August 9th), five weeks after admission, all the lesions have involuted with the formation of very small puckered scars, which will scarcely leave any permanent relic of the disfigurement suggested by the photograph.

THE INTRACAPSULAR OPERATION FOR CATARACT EXTRACTION.

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THERE is no doubt that the method for the extraction of the cataractous lens, complete with the whole capsule attached, is one which should be practised only in specially selected cases. Furthermore, this operation requires a greater degree of skill and more specialised technique than the old-fashioned method of cataract extraction in which the posterior capsule of the lens and flaps of the anterior capsule are left behind. Lieut.-Colonel Smith and other operators in India have done many hundreds of cases of extraction of the lens with the capsule complete, and there is no doubt that they have achieved a high percentage of remarkable successes. But we must remember that conditions in India are different, both as regards the material on which to work and also the psychology of the patient. The poorer type of patients in India, as is well known, journey large distances in order to have the operation performed, and are very adverse to the idea of having a two-stage operation, not to mention the possibility of returning later for a subsequent needling. Thus, when the cataract is bilateral, it is the custom to perform the operation on both eyes at the one time.

While in San Fransisco in July of last year I was much impressed by the excellent technique for the intracapsular operation which two brothers, Dr. Louis and Dr. Aaron Green, have evolved as a result of much experience and experimental investigations. I will say in passing that the Drs. Green are master technicians and work together admirably. They lay considerable stress upon the importance of choosing the right type of patient and the correct condition of the eye and orbit before this particular operation. They favour the so-called cadaverous type of orbit with very little orbital fat and sunken eyeball. As a primary consideration, they maintain that the method of deep infiltration orbital anæsthesia is the best preliminary to their operation. For a considerable time injections of novocaine solution into the back of the orbit have been given prior to enucleation of a diseased eye. For this technique of anæsthesia we are indebted to Lowenstein, of Prague, who published in 1908 his account of the method.

Method of Anæsthesia.

Since then Duverger and others have modified the technique somewhat. It is well known to every ophthalmic surgeon that the performance of an iridectomy under cocaine is usually attended with a sharp twinge of pain, which may lead to an involuntary movement on the part of the patient, sufficient to jeopardise the after result. Therefore, in place of or in addition to the method of Koller, who first instilled cocaine for anæsthetic purposes into the anterior chamber in 1884, we must avail ourselves with advantage of the deep injection of novocaine solution. The technique of the brothers Green consists in preliminary thorough sterilisation of the skin of the lids and that surrounding the orbit by first wiping it with benzine to remove the grease, followed by application of a 3 per cent. tincture of iodine, and finally by removing as much of the iodine as possible with alcohol. As a further precaution, it is their custom to shave the brow the night before operation. The lower border of the orbit is defined, and a point is chosen just lateral to the outer third of the lower margin. From here a long straight needle is pushed through the skin for a distance of about 4 cm., with its point directed inward and slightly upward between the inferior and lateral recti muscles. About 1 c.cm. of the 4 per cent. solution of novocaine with adrenalin is injected, and as the needle is gradually withdrawn, another c.cm. is emptied in the track of the needle, care being taken that the fluid does not puff out the subconjunctival space. It will be remembered that the ciliary ganglion lies between the optic nerve and the lateral rectus muscle, and it is in this region that we distribute the pressure of our solution.

In addition to the resulting inhibition of sensory impulses of a painful nature, the backward traction of the recti muscles (which is a frequent cause of loss of vitreous) is minimised. The palpebral fissure widens, the eye becomes more prominent and does not tend to shift about, making the operation for glaucoma or cataract much easier. The brothers Green report that in a series of 600 cases thus treated there were no cases of infection of the cellular tissues of the orbit, and only one hæmorrhage posterior to the eyeball, which happily resolved.

It might be anticipated that there would be a resulting liability to partial paralysis of the external ocular muscle, but this is not found to be the case. To complete the anæsthesia, about 4 c.cm. of the novocaine solution in question are used to infiltrate the upper and lower lids. Finally, about 1 c.cm. of the solution is injected from the external canthus laterally, with a view to striking certain twigs of the facial nerve, and as a preliminary to an external canthotomy.

One cannot lay too much emphasis on the fact that anæsthesia is only complete after a lapse of 45 minutes, and the great danger lies in operating too soon after the injection. It is highly important that the novocaine used should be that from sealed ampoules which have been sterilised.

Technique of Extraction.

The operation itself for the extraction of the cataract with the complete capsule attached, as performed by the Drs. Green, is a masterful performance. Perhaps in no other operation is a highly skilled assistant so imperative as it is in this operation for cataract extraction. The upper lid is held upwards by a special shelf-like lever directed from the lateral position by the assistant, the lower lid is slightly depressed by the forefinger of the other hand of the assistant. It is thus obvious that the usual speculum is entirely dispensed with. The usual incision for the extraction of cataract is made with the Graefe knife. At this stage a buttonhole or larger iridectomy is made. Then the small suction cup is introduced to fit on the anterior surface of the lens and capsule, and when it is realised that the suction has firmly gummed the capsule to the mouth of the instrument, the latter is deftly removed from the anterior chamber holding the capsule and contents firmly in position. It is of great importance to emphasise here that the technique of the Drs. Green differs very considerably from that of Barraquer. In the method just described, suction only is used to draw out the lens with its capsule, and no vibrations or trembling movements are required to rupture the zonule of Zinn. The fluid used in the pump is oil of a special specific gravity and viscosity, and further, it is most important to remember that there is a double lever control for the graduation and stoppage of the negative pressure.

While in San Francisco I witnessed the performance of eight intracapsular extractions of the lens on selected cases. In no case was there any loss of vitreous, and I was considerably impressed with the beautiful black round pupils, healthy condition of the globe, and excellent vision which resulted afterwards

This operation is most desirable only for selected cases; the skilful technique and excellent results of the Drs. Green have only been attained as the result of rigid asepsis, long research, and extensive experience.

THE RATE OF SEDIMENTATION OF RED BLOOD CORPUSCLES IN PULMONARY TUBERCULOSIS.

BY R. C. WINGFIELD, M.B. OXF., M.R.C.P. LOND.,
AND
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OUR excuse for this paper, on a subject already so widely discussed, is that we have made an attempt to determine the exact practical value of the rate of the sedimentation of red blood corpuscles in the diagnosis and prognosis of pulmonary tuberculosis. The literature is vast, and we have made no attempt to give any references.

Technique.

We have used the method of Linzenmeier.

Apparatus.—(1) A 1 c.cm. glass syringe divided into tenths. (2) Test-tubes about 6 cm. high of 5 mm. calibre. 3. Freshly prepared 5 per cent. sodium citrate solution.

Procedure.—The test-tube must be scrupulously clean and dry. The syringe and needle must be rinsed with the citrate solution. 0·2 c.cm. of the citrate solution is taken up into the syringe, and 0·8 c.cm. of blood is withdrawn from a convenient vein with as little stagnation as possible. The syringe is inverted several times to mix the blood and citrate solution, then, with the needle still in situ, the contents are expelled into the test-tube, care being taken to avoid bubbles. The tube is then placed in a perpendicular position, and kept at room temperature.

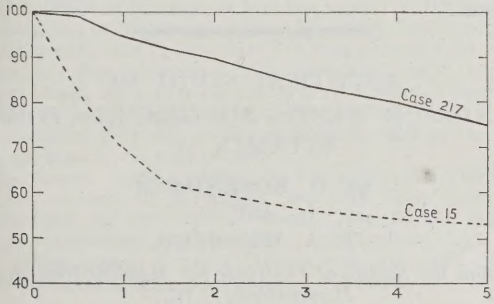
Reading Results.—The distance between the top of the column of blood corpuscles and the bottom of the meniscus of the supernatant fluid is measured every half an hour for the first two hours, and after hourly up to five hours.

The results were graphed, the ordinates being the percentage which the corpuscle column bears to the whole column, and the abscissæ the time in hours.

It was found that the readings during the first two hours were all that were necessary, and that for practical purposes a reading of 90 per cent. or over in the first hour could be considered within normal limits. For the graph of the sedimentation rate of a normal person depicted by this method is almost a straight line, while that of an abnormal condition appears as a curved line, the maximum fall occurring within two hours, after which time the curve flattens out (Fig. 1).

Fig. 2 is given to show the importance of the correct proportion of blood to citrate solution. Any decrease below 80 per cent. of blood tends to produce a sedimentation rate which approximates to normal even in an abnormal condition.

FIG. 1.



Showing a normal and an abnormal graph.

FIG. 2.

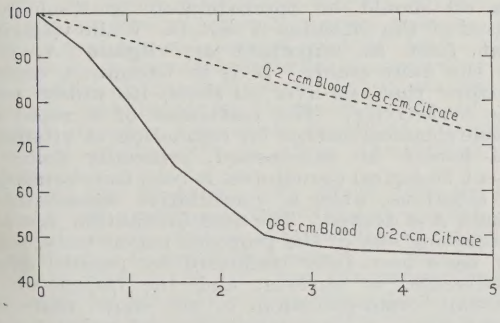
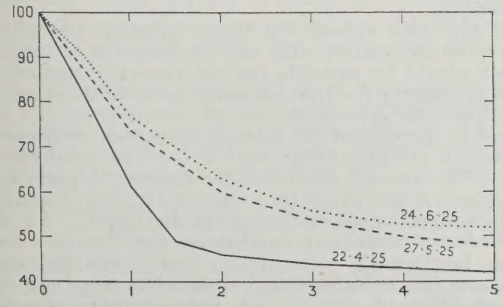
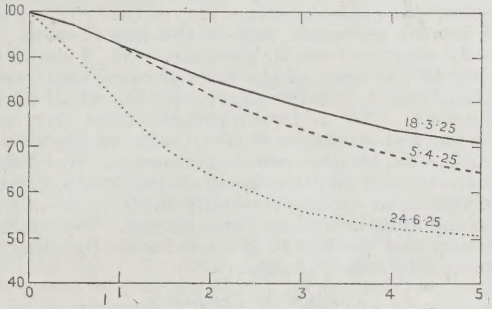


FIG. 3.



CASE 47.—Showing decreasing abnormality of the graph with improvement in health.

FIG. 4.



CASE 27.—Showing increasing abnormality of the graph with extension of disease.

FIG. 5.

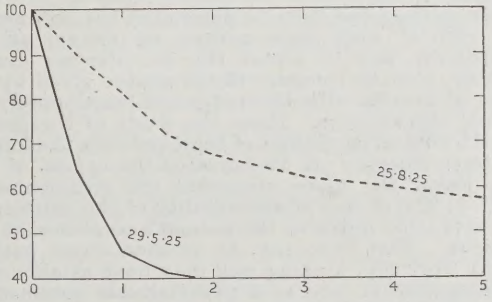
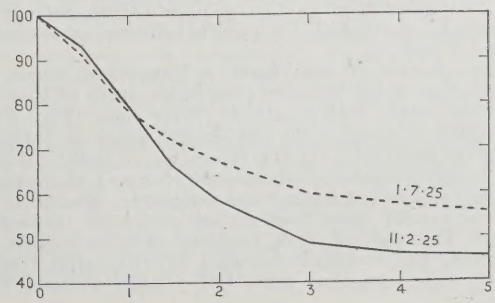


FIG. 6.



Value in Diagnosis.

The material used for these tests was as follows :—

Cases definitely diagnosed as chronic pulmonary tuberculosis (all adult males). Of these, with T.B. in sputum, 131 ; without T.B. in sputum, 25	156
Normal persons with no evidence of disease	8
Disease of the lungs in which tuberculosis was definitely excluded (all adult males). Of these, bronchiectasis, 2 ; lung abscess, 1 ; G.S.W. of chest, 1 ; syphilis of lung, 1	5
Other diseases in which no evidence of tuberculosis was detectable, and in which there was no evidence of any suppurative condition (adult males and females). Of these, diabetes, 6 ; carcinoma, 4 ; morbus cordis, 5 ; cerebral hæmorrhage, 2 ; gastritis, 2 ; Graves's disease, 2 ; fracture, 1 ; aneurysm, 1 ; lymphatic leukæmia, 1 ; subacute appendicitis, 1 ; pernicious anæmia, 1 ; spastic paraplegia, 1 ; hernia, 1 ; epilepsy, 1 ; club-foot operation, 1	30

Results.

	Sedimentation rate curves. Per cent. Abnormal.	Normal.
1. Of the 156 cases of chronic pulmonary tuberculosis	91·00	9·00
2. Of the 131 T.B. present in sputum cases	92·40	7·60
3. Of the 25 T.B. not present in sputum cases	19·04	80·96
4. Of the 8 normal persons	12·50	87·50
5. Of the 5 non-tuberculous lung disease	100·00	—
6. Of the 30 other diseases	86·70	13·30

The results 1, 2, and 3 show that while a definite case of chronic pulmonary tuberculosis usually gives an abnormal sedimentation curve, there is an error of at least 7 per cent., and in the less obvious cases the error may be over 50 per cent. No. 4 shows that roughly 10 per cent. of the normal cases may give an abnormal curve, but the figures are too small to draw conclusions. No. 5 is important, since five cases, where the test might be of great value in the differential diagnosis, all gave abnormal curves. No. 6 shows that an abnormally increased sedimentation rate is too common in disease generally for it to be of much use in the diagnosis of any one disease. We conclude, therefore, that the test is of no value in the diagnosis of pulmonary tuberculosis.

Value in Prognosis.

To estimate the value of the sedimentation rate in the prognosis of pulmonary tuberculosis is difficult, but we have come to the conclusion that it is of distinct value under certain conditions of medical practice.

Our method has been to determine the sedimentation rate of each male patient on arrival at the sanatorium, and to repeat this at intervals during his stay, then to compare the prognosis given by his series of graphs with the prognosis based purely on clinical observations. From the study of the graphs and the clinical conditions of these patients the following facts emerge : 1. The greater the extent of the lung lesion the more abnormal the sedimentation rate. 2. The degree of abnormality of the sedimentation rate is no index to the patient's condition at the moment. That is to say, an ex-sanatorium patient on full work and keeping well may have as abnormal a sedimentation rate as a pyrexial case confined to bed. 3. Apparent clinical improvement or lack of improvement is associated with a decrease or an increase in the abnormality of the sedimentation rate, but this alteration in the sedimentation rate could always be predicted by careful clinical observation (Figs. 3 and 4).

The graphs of two further illustrated cases are included in order to show that the results of this test must be read with caution. One case (Fig. 5) in particular whose graphs are shown raises an interesting point as to how far the alteration in sedimentation rate is influenced by tuberculosis per se ; it suggests, as has been noted by several observers, that it is the destruction of lung tissue that plays an important part. The patient was making excellent apparent progress, which was confirmed by the improvement in the sedimentation rate, but within a short time of the taking of the second reading he developed a tuberculous elbow, and his symptoms suggested that this new lesion may have begun even before the second reading was taken.

The graphs of another individual case are included (Fig. 6) as they seem to have a bearing on the same point. The second graph showed a distinct improvement, commensurate with that suggested by clinical observation. But within a few days the patient had a smart febrile relapse, a definite one, though it certainly was of no great duration. This second example suggests that the sedimentation rate is not a very delicate test of the position in which a patient stands in relation to his tuberculosis, but that it must be looked upon as an indication of improvement or lack of improvement of the general condition as a whole.

Conclusions.

We must therefore admit that when close clinical observation is possible the sedimentation rate is of little value. But many cases of pulmonary tuberculosis have to be treated under conditions where such clinical observation is not possible, in the out-patient department, the dispensary, and in private practice. And under these conditions, so simple and quick is the technique involved, that the test should prove of great value to the physician in his ponderings over such difficult questions as " Is this patient holding his own or not ? " " Am I justified in putting this patient to the trouble and expense of a more drastic form of treatment than I am giving him at present ? "

A CRITICAL STUDY OF COLOUR TESTS SUGGESTED FOR VITAMIN A.

BY O. ROSENHEIM
AND
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THERE is general agreement as to the desirability of guaranteeing, by appropriate tests, that cod-liver oil should be approximately constant in its content of the vitamins A and D. While vitamin D is at least as important as vitamin A, it is also the more stable. It is in vitamin A content, therefore, that cod-liver oil shows its widest variations in activity. The usefulness of a rapid and reliable chemical method for estimation of vitamin A need hardly be emphasised, especially since the present biological growth-test is both time-consuming and laborious, when a quantitative assessment of vitamin A is desired. The need for caution, however, in accepting any of the proposed colour tests, before they have been fully confirmed by parallel animal experiments, is obvious, and the object of the following communication is to show that one, at any rate, of these tests has no value for the purpose intended, and may therefore be seriously misleading.

Of the two colour reactions recently brought to notice as associated with the presence of vitamin A, either would be suitable for colorimetric application if its specificity for that vitamin were established. In the first, discovered by one of us,[1] a transient blue colour is developed by adding arsenious chloride (or antimony chloride, Carr and Price [2]) to cod-liver oil, and in the second, described by Fearon,[3] a permanent red colour is produced by pyrogallol in the presence of trichloroacetic acid and an oxidising agent. We have worked out standard conditions for the two tests, using Lovibond's colorimeter, which enabled us to compare the colorimetric values of a large series of oils of different origin with their growth-promoting power, as tested by feeding experiments on rats.

Two Entirely Different Colour Reactions.

We soon recognised that the two colour reactions are due to two entirely different chromogenic substances. They differ in their behaviour towards solvents and can be quantitatively separated from each other in one operation, by saponification of the oil. It is now definitely established that the whole of the growth-promoting property of an oil is contained in the unsaponifiable fraction, and that the soaps are devoid of activity. When an active oil is saponified it is found that the ether extract, prepared with the usual precautions to prevent destruction of the labile vitamin, gives the $AsCl_3$ reaction with increased intensity, quantitatively proportional to the amount of "unsaponifiable," whilst the pyrogallol reaction is entirely negative. On the other hand, the soaps retain the whole of the chromogen reacting with pyrogallol; this chromogen was subsequently found to be associated with the unsaturated fatty acids. These facts alone furnish decisive chemical evidence against the view that Fearon's reaction is related to vitamin A.

An equally decisive answer was hardly to be expected from the biological tests, since all active cod-liver oils tested gave both the colour reactions (although apparently in different and unrelated proportions), and all inactive vegetable oils were negative to both tests. In the course of an investigation in which we examined the oils of livers not only of the cod-fish, but of other animals as well, we found, however, another class of oils and fats which are positive to the $AsCl_3$ reaction and negative to Fearon's test. In these the presence of vitamin A had been proved by previous feeding experiments on rats. In every instance these fats gave the $AsCl_3$ reaction,* in some cases with many times greater intensity than cod-liver oil. On the other hand, only fish liver oils give Fearon's reaction. This reaction is entirely negative in the case of the liver oils of all birds so far examined, and in the liver fats of nearly all mammals.

We found, further, that the body-fat of the animals so far examined is either entirely free from the chromogen of the $AsCl_3$ reaction (as in the case of marine animals), or contains only traces of it. On the other hand, some of these fats are rich in the material giving rise to Fearon's reaction.

Biological Test.

In order to obtain a clear-cut answer from the feeding experiments we selected for the biological test two oils, easily available in sufficient amount, one of which (sardine oil) gave a positive reaction with Fearon's reagents and none at all with $AsCl_3$, whilst the other (pig's liver fat) reacted in the opposite sense. The feeding experiments were carried out by the technique introduced by Drummond, Coward and Handy,[4] in which a constant supply of vitamin D (irradiated cholesterol) is given throughout the experiment.

Through the kindness of Dr. H. H. Dale we were enabled to test a sardine oil,† which had been sent to him by Prof. Poulsson, of Oslo, as possessing an extremely low or no growth-promoting activity. This oil was entirely negative in the $AsCl_3$ test, but gave a Fearon's reaction of an intensity corresponding to an average cod-liver oil. On the basis of the latter test sardine oil should be rich in vitamin A, but the animal test, carried out by us, showed it to be entirely devoid of this factor; the oil neither caused growth under the conditions indicated above, nor had it any effect on xerophthalmia.

The fat prepared from pig's liver was entirely free from the chromogen reacting with pyrogallol, but a quantitative colorimetric test with arsenious chloride (or $SbCl_3$) showed it to contain about twice the amount of chromogen reacting with $AsCl_3$ as compared with a good sample of cod-liver oil. The solid fat was dissolved in liquid paraffin and administered in doses equivalent to half the doses found to be efficient in the case of the cod-liver oil. On the basis of the Fearon test, this fat should be devoid of growth-promoting activity, whilst it actually produced as good growth as double its amount of cod-liver oil. This fat also induced a rapid cure of xerophthalmia.

As regards Fearon's test, therefore, the evidence appears to be quite definitely against its having any relation to vitamin A, for the estimation of which it was suggested. In the case of the colour reaction with $AsCl_3$ (or $SbCl_3$) the possibility of a direct relation of the chromogen to vitamin A remains open. Such additional evidence as is here presented is quite compatible with its specificity; but no conclusion would be justified until yet further evidence has been obtained.

Effect of Exposure to Light and Air.

In connexion with these colorimetric tests some experiments may be briefly mentioned in which the effect of exposure to light and air on cod-liver oil was examined by parallel colour and feeding tests. It was found that the $AsCl_3$ colour reaction disappeared together with vitamin A (as tested on the animal) when cod-liver oil was kept in loosely stoppered glass bottles exposed to light under laboratory conditions for eight weeks (see also Peacock[5]). Since we had previously observed that the chromogen responsible for the $AsCl_3$ reaction is rapidly destroyed by organic peroxides the exposed oil was examined by various characteristic tests. The guaiacum test with peroxidase (from horse radish) was found to give a strong reaction. A distinct positive reaction was obtained with dilute blood (and guaiacum) and a strong reaction with potassium iodide-starch solution. Seven different samples of ordinary cod-liver oil, kept in the dark, were also tested, and of these one did not react with the $AsCl_3$ reagent. This particular oil gave a strong peroxide reaction and was found inactive in the growth-test. When mixed with an active sample of cod-liver oil it rapidly destroyed in this the chromogen of the $AsCl_3$ reaction (see also Fridericia[6] and Sjörslev[7]). It would therefore seem that the peroxide reaction deserves to be considered in further work, in conjunction with other tests, when judging the vitamin value of cod-liver oils.

The destructive action of both light and air on vitamin A is well known, and it is surprising that this knowledge has not yet led to the more general supply of the oil in small bottles of brown glass.

The experimental details of this preliminary communication will be published elsewhere.

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* In this connexion it might be mentioned that the livers of rats on a diet deprived of vitamin A no longer possess any growth-promoting activity, and, as we have found, their fat no longer reacts positively with $AsCl_3$.

† European sardine oil is obtained from the heads of *Clupea sardinus* in the preparation of tinned sardines, Japanese sardine oil from *Clupanodon melanosticta*. We have no information as to the origin of the oil supplied by Prof. Poulsson.

BRIGHTON POOR-LAW INSTITUTION.—"The position is wrong, the accommodation as proposed is poor and inadequate, and only a makeshift, extensions are not possible, and there is also a considerable waste of space by reason of the conversion of a building not adapted to the new use. Sooner or later a suitable nurses' home will be essential; therefore the present proposed expenditure is neither well spent nor economical." Despite this scathing criticism by the Ministry of Health, the Brighton Guardians, by 16 votes to 14, on Sept. 21st, declined to have plans prepared for a new nurses' home, being of opinion that the present time is inopportune for building. The guardians' proposal is to adapt the existing premises at a cost of over £1150 rather than embark on a scheme involving a much higher expenditure. This was the proposal turned down by the Ministry. Brighton is a large town with a growing population. The Poor-law institution on Sept. 21st had 432 inmates in the infirmary and 307 inmates in the other portion, a total of 739. These numbers are likely to increase rather than decrease.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

THE opening meeting of this Section was held on Oct. 8th, Sir HERBERT WATERHOUSE, the President, in the chair.

Multiple Bony Lesions.

Mr. J. H. SHELDON showed specimens from a case which was exhibited to the Section last November as one of multiple bony lesions. Seen in life on that occasion, he was a boy aged 20, whose family history presented nothing unusual. At 11 years of age a hard lump appeared on the outside of the right knee, but caused no inconvenience. It was regarded as an osteoma of the head of the tibia, and was excised. At the operation the tendon of the rectus femoris was seen to be studded with multiple fibromata. Four years later there was a recurrence of the lump, but without pain. Its increase, however, interfered with his work, and a large osteoma was removed from the right knee. Soon after his discharge from hospital growths began to appear in other limbs. One, on the right wrist, began as a soft painless swelling. Fomentation caused it to burst, and thick yellow pus was exuded. This, up to last year, had not healed. Similar swellings appeared and ran a like course, on the right elbow, on the back of the right arm, and in the right axilla, but these latter healed. In May, 1925, the right shoulder became the seat of a similar swelling, and that had been more painful than the others. It was, when Mr. Sheldon saw him, tense and there was marked fluctuation, with reddening of the skin. Movement at the shoulder was almost lost. The fluid withdrawn from this constantly increasing swelling was sterile and free of cells. It showed the absorption spectrum of urobilin, and gave a positive van den Bergh reaction. Skiagrams showed expansion of the upper third of the humerus, with destruction of bone and loss of the normal outline. There was, however, still the formation of new bone. The glenoid cavity was destroyed, and the coracoid process partly so. In the skull the patient had an exostosis arising from the external occipital protuberance; a general thickening of the bones of the vault; the pituitary fossa was deepened; there was an irregular outgrowth of bone from the inner table of the frontal bone and the roof of the orbital cavity, and an irregular thickening and new formation of bone on the floor of the skull in the region of the condylar processes. The boy's hands and feet were large in proportion to the remainder of his body. A relative lymphocytosis occurred at one time, but by November last that had disappeared. The temperature fluctuated between 99° and 101° F.

The patient has since died, and the post-mortem examination showed a number of features. There was a marked general tendency to ossification of the tendons. It was not an exostosis, but a definite laying down of new bone. The middle bone of the carpus was found united to the radius, so that the whole structure of the joint was changed. The distal bones of the carpus were united by firm fibrous tissue, and very hard, ivory-like bone was laid down in the interosseous membrane. In the arachnoid membrane 16 sq. cm. of new bone had been laid down. Definite cellular changes were found in the pituitary gland, and there was a great increase in all the absolute measurements of the cadaver. There was a parathyroid tumour the size of a large bean on the under surface; its microscopic structure was very indefinite. The bone-marrow everywhere was white, and there was an aplasia of the red elements and of the leucocyte series. Plasma cells were numerous and were undergoing a chronic inflammatory process. It was a large swelling of the upper part of the right arm which eventually killed the patient; it weighed 23½ lb. Yet there were no metastases, except two doubtful ones in the right lung.

Dr. PARKES WEBER regarded this as an excessive instance of the von Recklinghausen's multiple fibrocystic bone disease.

Tumour of Skull: Jacksonian Epilepsy.

Dr. C. F. T. EAST showed a man, aged 68, with a tumour of the skull. The history was that three years ago he struck his head on a girder and during 18 months he had been having attacks of Jacksonian epilepsy, starting as a flexor spasm of the left foot, and spreading up the left side of the body to the left hand, to the accompaniment of sensory symptoms. Weakness was present in the left hand and leg, with increase of reflexes and an extensor response in the left foot. At the site of the lump on the skull skiagrams showed a rarefaction of bone. The Wassermann was negative.

Mr. E. G. SLESINGER considered that the lump was an endothelioma, and if the man had been in better general condition surgical removal could have been carried out and a flap made.

Cirrhosis of Liver.

Dr. EAST also showed a girl, aged 11, the subject of cirrhosis of the liver. Her Wassermann was now positive, and she was being treated with pot. iod. and mercury. When the girl was 16 months old telangiectases appeared on the face, and since her fifth year she had had two attacks of hæmatemesis and melæna, with frequent epistaxis. The urinary diastase was high. The metacarpal bones on either side were shortened.

The PRESIDENT remarked on the frequent association of nævi with cirrhosis of the liver, and said it was the opinion of some authorities that if a man of 50 developed nævi it was an almost sure indication that he had cirrhosis of the liver, while multiple nævi rendered it a practical certainty.—Dr. WEBER said the angiomata associated with cirrhosis of the liver were, nearly always, "spider nævi." If the finger were placed on the centre of one of these a definite pulsation was discernible, as if it were the site of a softened small artery. The most likely explanation seemed to be the lodgment there of micro-organisms of a low degree of malignancy.—Dr. ATKINSON said he had seen a similar deformity of thumb and large toe in African natives suffering from yaws, a disease much like syphilis, and the process might be analogous in the two diseases.

Osteitis Deformans.

Dr. EAST also exhibited a male patient, aged 58, who suffered from osteitis deformans. Bowing of the legs commenced while the man was in India, four years ago, and since that date his head had been steadily increasing in size, and he had become much shorter of breath when taking exercise. He had had acute rheumatism twice—namely, when he was aged 22 and 34 years. At the present time the skull, the clavicles, the forearms, the femora, and the tibiæ showed the changes typical of osteitis deformans. The heart showed aortic stenosis and some reflux, with marked hypertrophy of the left ventricle. Skiagrams revealed advanced calcification of the arteries of the limbs. The Wassermann reaction was doubtful. The electrocardiogram showed a preponderating hypertrophy of the left ventricle and extrasystoles.

Arthritis and Osteoporosis.

Dr. L. S. T. BURRELL showed an unusual type of arthritis in a woman aged 46, whose fingers and toes had gradually become deformed during the last five years. X rays revealed osteo-arthritic changes in the metacarpal and metatarsal bones. No nerve lesion had been found to account for the condition.

The PRESIDENT commented on the smallness of the affected bones, and thought treatment did not seem hopeful.

A Case for Diagnosis.

Dr. DOUGLAS FIRTH also asked for the views of members on a heart condition in a girl of 10. At first it was considered to be congenital morbus cordis, and she was taken into hospital. The view of a colleague was that it was mitral stenosis. There was no history of rheumatic fever obtainable, nor of tonsillitis or any

infective illness. She was not cyanosed and there was no clubbing of fingers. When she lay recumbent there was audible a short soft systolic murmur and a diastolic noise, the latter, in certain postures, becoming distinctly musical. He regarded the lesion as a congenital one, and thought she could safely lead a normal life. For insurance purposes she did not justify a "loaded" policy.

Dr. JENNER HOSKIN thought the impulse in this case was more heaving in character than normal, that the cause of the musical squeak was exocardial, and that what she had now followed an old pericardial condition. He would ban violent exercises for her, and thought insurance doctors would either refuse her or only approve a loaded policy.—Dr. HALLS DALLY agreed that the lesion was exocardial. The whole precordium tended to heave with the first apex-beat. He did not believe the heart was much enlarged. There was probably some latent rheumatic infection. He discouraged the idea that the child should be regarded as an invalid.—Dr. WEBER said he did not know a definite case in which a definitely musical murmur had been proved to be exo-cardial.

Congenital Morbus Cordis.

Dr. J. L. LIVINGSTONE exhibited a small boy, aged 6, with congenital morbus cordis. There was no history of rheumatism, but three years ago he had diphtheria and the medical attendant detected a heart murmur. He was normal in size and weight according to age, and very alert mentally. There was no cyanosis or clubbing of fingers, but pulsation was marked in the second and third left costal spaces and an accompanying thrill. On auscultation a systolic murmur was evident, not well conducted up the neck, but audible over most of the left side of the chest. The pulmonary second sound was accentuated. The electrocardiogram showed complete heart-block; therefore it seemed there was some lesion in the interventricular septum, interrupting the conduction between auricle and ventricle. The physical signs did not seem to accord with patent ductus arteriosus.

Dr. HOSKIN said there were features in the case against it being pulmonary stenosis. The heart condition was, in his view, a direct sequel of the diphtheria three years ago; the mother was not aware of anything wrong with the heart until the diphtheria illness. The child had a patent interventricular septum.

Syringomyelia of the Cervical Enlargement.

Dr. WEBER showed what he regarded as a typical case of syringomyelia of the cervical enlargement, manifesting the dissociated sensation and other symptoms of that condition. It was most marked in one hand; there was weakness of the other hand. At first sight the man seemed to have acromegaly, but that was chiefly discounted by the fact that there was no fleshy enlargement of parts of the face, such as the nose, the chin, and the tongue. The skiagram did not show any enlargement of the sella turcica.

SECTION OF OPHTHALMOLOGY.

A MEETING of this Section was held on Oct. 8th, when Mr. ERNEST CLARKE, the newly elected President, delivered an address on

OPHTHALMOLOGY IN THE LAST HALF CENTURY.

He had been engaged in ophthalmological work, he said, for 45 years. In 1881 he had attended Donders's Clinic at Utrecht, and there had met Snellen, who had demonstrated his method of detecting malingering by showing red and green letters through red and green glasses. It was nowadays difficult to realise that it was only in 1884 that Koller, of Vienna, introduced cocaine to the profession. Valuable as this was for eye work it was liable to be misused; it was not always realised how valuable an indicator was pain, and efforts were often made to allay it without trying to discover its cause.

Perhaps the greatest change of the last 50 years, said the President, was in the treatment of errors of refraction and muscle-balance. In his early days the refractionist's armamentarium was quite limited, though the shadow test was used. Eye-strain was styled asthenopia, and only one symptom, headache, was attributed to it. The speaker had been inspired to write his book on eye-strain in 1881 by the work of Gould, of Philadelphia. Gradually eye-strain had obtained a fuller recognition, both in ophthalmology and general medicine, so that now it had been established that there was probably no functional nerve trouble in which eye-strain might not be at least a contributory cause. It was possible, by attending to it, to postpone epileptoid attacks, migraine, and recurrent iritis for an indefinite period, and possibly to delay or postpone the appearance of glaucoma and cataract. Eye-strain was more likely to be associated with small errors, and, in sensitive patients, one-eighth of a diopter might make all the difference between efficiency and unfitness. The wastage of effort in eye-strain persisted during waking hours, so that its effect on the nerves was insidious and lowered the resisting power of the individual to infection when he happened to be within its ambit.

Some stated, continued the President, that cycloplegics were not needed when estimating the refraction of an eye, but that was not his view. Most people under 40 years of age could not completely relax their accommodation, so that the doctor could not get down to bed-rock in judging of the real condition of the eye. It was very important to paralyse the accommodation, more especially in all young patients. As, however, the pupil was dilated during the examination a post-cycloplegic examination was often needed before prescribing glasses. As Dr. Hawley, of Chicago, said, the object of the cycloplegic was to ascertain the exact degree of astigmatism. Advance had certainly been made in the period under review in the treatment of myopia. In earlier days it had been customary to allow those with 3 to 4 diopters of myopia to do their near work without glasses. Time had shown that the ideal treatment for myopia was to correct it fully, with any astigmatism which happened to be present; this forced the ciliary muscle to do its proper work, staying in this way the progress of the condition. He agreed with Sir Arthur Keith that myopia was due to a badly constructed sclerotic, and that this was prenatal and inherited. The fault might be due, Mr. Clarke thought, to a defective influence of one or more of the endocrine glands. Presbyopia also was formerly very inadequately treated, a plus glass being prescribed, generally the same for both eyes, and the astigmatism not being corrected, unless it was of considerable degree. The presbyopic age was that at which eye-strain, if present, did most harm, because vital powers were then on the down-grade and recuperation was lessened. He was a strong advocate of bi-focal glasses for this condition, which opticians now made with great skill. The reason some people objected to these was that often the reading portion was made too strong. Great care must also be exerted to secure correct centring of the glasses. In the treatment of imbalance of the extra-ocular muscles Maddox, of Bournemouth, had put the knowledge on a sound basis, and his glass rod test gave an expeditious and easy method of diagnosing heterophoria. A small amount of exophoria or hyperphoria, or both, might cause as much eye-strain as did small degrees of astigmatism, and the two conditions were very often associated. By carefully correcting the refraction the heterophoria could usually be removed. Except in old people, or those whose error was large, prisms were not the best treatment.

Progress in Diagnosis and Treatment.

Dealing with progress in methods of diagnosis and treatment, the President referred to the great value of X rays in ophthalmology, in giving a view of the bones of the skull and indications of abnormalities in association with the pituitary gland, and in giving the localisation of foreign bodies in the eye. Radium, ultra-violet light, and vaccine therapy had

each their value, ultra-violet light being found specially useful in tuberculosis of the iris and ciliary body. In treating many eye diseases it had recently been shown by Hepburn and Browning how important it was to do a differential blood count in sympathetic ophthalmitis. Mr. William Lang, a former president, had continually insisted on the importance of dental sepsis as a prolific cause of eye trouble, and it had been found that similar contributing causes were tonsillitis and disease of accessory sinuses.

Marked changes in the surgery of the eye, the President said, had not been conspicuous in the last 50 years. Elliott's trephine operation for simple chronic glaucoma remained deservedly the most popular. There had been great improvement in the treatment of convergent strabismus in children, but by persuading parents to bring their children for attention at an earlier age a large number of these cases were being cured by glasses alone, and operations for squint being now proportionately fewer than formerly. The surgery of the eye in the unusual conditions produced by the war had been greatly advanced by Sir William Lister and Mr. J. F. Cunningham, and much fighting strength had been conserved by the special precautions instituted to prevent the spread of trachoma, which so seriously affected Eastern races.

Referring to improved education in matters ophthalmological the President recommended that those who had just qualified and had started serving as clinical assistants in an eye hospital should spend at least a year in general practice, if they could do so. This would teach them that the eye was part of the general organism, and not an isolated organ.

Looking to the future, he hoped that the micro-organisms causally associated with trachoma and vernal catarrh would be discovered, and that the true theory of accommodation would be evolved. Much more was yet to be learned as to the significance of blood pressure and the effect of the endocrine glands in health and disease.

Clinical Cases.

Mr. J. F. CUNNINGHAM showed, for Mr. M. S. MAYOU, a case of Massive Detachment of the Retina. At first hæmorrhages had been seen on the surface of the retina at the detachment. At the present time the sites of the hæmorrhages had been replaced by pigment. Mr. Mayou also sent a case of essential shrinking of the conjunctiva, which some thought might be due to pemphigus. Some months ago the boy had an eruption in which the lids were affected.

Dr. HUGH THOMPSON showed a man with the rare condition known as Electric Retinitis, which was, he said, closely akin to eclipse blindness. The stippling in the macula had definitely followed an electric flash, and a fellow worker at the same task had had temporary blindness. The sight of the patient shown, however, had not improved, though the incident had occurred three months ago.

Mr. M. L. HINE showed a man with Neurofibromatosis in the upper lid, with the object of receiving advice as to treatment. There had been pain in the right eye with a persistent discharge which ended in ulceration of the lower lid, owing to the upper lid overhanging it. This right eye was practically blind and useless. His own view was that it was wisest to remove the right eyeball, and provide the patient with an epitheliated socket, as was done in the war.

Mr. TREACHER COLLINS spoke of the procedure adopted in cases of the kind by Mr. Simeon Snell, who removed a large piece of the thick part of the eyelid, with some cosmetic advantage. One patient had had buphthalmos and Mr. Snell had removed the whole eye and sent it to Mr. Collins for pathological examination. He had found that the ciliary nerves were involved, as well as the nerves of the eyelid; the chorioid was thickened, and contained bodies which looked like enlarged nerve end-organs.

Mr. F. JULER spoke of a patient he had shown to the Section five years ago, in which both eyes were affected. At first it was thought that the worse eye was buphthalmic, but afterwards it was concluded that it was only highly myopic, therefore the question of excision had been left in abeyance.

Mr. HUMPHREY NEAME showed a patient suffering from Interstitial Keratitis with Deep Corneal Striation. The deep striation arranged radially occupied three-fourths of the area of the cornea, and was probably due to ridges caused by relaxation of the cornea. The keratitis in this case he regarded as of syphilitic origin. The Wassermann was positive, but the patient showed none of the stigmata of congenital syphilis.

Mr. COLLINS said that he thought that the lines were rucks in Descemet's membrane.

Mr. CUNNINGHAM brought forward a patient with a mass obscuring the optic disc; the case had been originally shown in 1920. There was now a black pigmented area in the region of the disc, and the retinal vessels were obvious. The case came into the category of evulsion of the optic nerve.

Mr. DAVID WILSON (Torquay) showed a man aged 74, who had had detachment of the retina 20 years ago. A few weeks ago, during an illness of asthma and bronchitis, when the patient was coughing, a cataractous lens had been transferred to the anterior chamber. When Mr. Wilson saw him the eye was blind, and the other eye had well-marked striæ and was highly myopic. The first eye was removed. In a somewhat similar case he had been content to remove the cataract.

Dr. RAYNER BATTEN showed on the screen drawings of a series of cases of Tay's chorioiditis.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the committee 64 cases were considered and £785 15*s.* 6*d.* voted to 51 applicants. The following is a summary of some of the cases relieved:—

L.R.C.P. Edin. 1882, aged 73, who practised in the south of England until 1924. Afterwards lived with aged mother until her death last year. Home now broken up. Has been offered a home with a married daughter, but must contribute towards his maintenance. Only income, old age pension. Voted £40 in 12 monthly instalments.

Daughter, aged 64, of M.R.C.S. Eng. who practised in Dorsetshire and died in 1869. Now lives in an almshouse with an allowance of £13 per annum; only other income is a half share in property amounting to £25. Friends gave £2. Maintenance grant asked for and the committee voted £30 in 12 monthly instalments.

Widow, aged 62, of M.R.C.S. who practised in London and died in 1923. Owing to ill-health quite unable to earn her own living and is entirely dependent on her mother, aged 83, whose only income is derived from a small army pension. Voted £30 in 12 monthly instalments.

Widow, aged 59, of M.B. Glasg. who practised in Scotland and died this year. Only income £50 per annum. Has one son aged 22, who is apprenticed to engineering and has two and a half years to serve; he receives one guinea a week, and the applicant has to supplement this to pay his board and lodging. Suitable premises have been secured to enable applicant to set up a tea-shop, and on the strong recommendation of the Fund's visitor a grant was made of £20 in 12 monthly instalments and a special grant of £10 to help furnish the premises.

Widow, aged 33, of M.B. who practised in Scotland and India and died from an accident in April last. Total effects valued at £100. Insurance received £500. Applicant left with two children aged 2 years and 4 months. Now living with relations. Voted £5.

Widow, aged 58, of M.R.C.S. Eng. who practised in London and died suddenly this year. Dependent on two daughters, bank clerks. Only income £14 per annum. Rent of flat taken on lease £125 per annum. Asks for help for boy, aged 15, who has a scholarship at a public school. Voted £10 in two instalments.

Widow, aged 68, of M.D. who practised in London and died in 1919. Has a great difficulty in obtaining work on account of a mentally deficient daughter aged 26, who needs care. They are now dependent on a married son and his wife. Unfortunately the son is out of work and his wife's earnings are their only support. Arrangements are in hand to secure a home for the daughter, and £26 in 12 monthly instalments was voted to the applicant.

Widow, aged 38, of F.R.C.S. Edin. who practised in Middlesex and died last year. When estate is realised there will be an income of about £45 per annum. Applicant asks help with outfit and expenses for only girl who is being sent to school. Voted £20.

Daughter, aged 53, of M.D. Aberd. who practised in London and died in 1880. She lives with a sister in their own house, but owing to neuritis and arthritis has not been able to help in the house and with the boarders as she is accustomed to do. The applicant asked if the Fund would give her a grant towards a holiday, and the committee voted £5 and paid for three weeks in a convalescent home.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters Symonds, at 11, Chandos-street, London, W. 1.

Reviews and Notices of Books.

ATLAS OF THE HISTORY OF MEDICINE.

Part I. Anatomy. By Dr. J. G. DE LINT, Lecturer on the History of Medicine at the University of Leiden. With Foreword by CHARLES SINGER. London: H. K. Lewis and Co., Ltd. 1926. Pp. 96. 15*s*.

THE fundamentals of certain sciences are in themselves of a Saharan aridity. The geometrical study of the properties of similar triangles or of the theory of Pythagoras, better known as the Pons Asinorum, is not to most people interesting in itself; but when applied to the measuring of inaccessible heights or distances it is the foundation of many arts and of the solution of varied problems. So with anatomy. The early steps thereof are dull; but when all these dry facts, being mastered, are applied to practical uses, anatomy has an interest of which the beginnings show no sign. Dr. Lint has conceived the happy idea of compiling a pictured history of anatomy, not merely pictures of bones, muscles, nerves, &c., but portraits of anatomists together with reproductions of the title pages of illustrations from their works. Many of the drawings of anatomical preparations are of extreme beauty—e.g., Fig. 114, a skeleton from Bidloo's Anatomy, and Fig. 42, which includes some of Leonardo da Vinci's exquisite sketches. In connexion with the process of injecting vessels with a solidifying injection, as practised by Swammwerdam, Marchetti, and de Graaf, Boyle's name ought to have been mentioned, for he was certainly one of the earliest if not the earliest to practise this method, which he described in 1663 in a treatise "Of the Usefulnesse of Naturall Philosophy." Dr. Singer in his foreword points out that, as is only natural, Dr. Lint has mentioned a great number of his own countrymen and that this stresses the marked connexion between English and Dutch observers in the sixteenth and seventeenth centuries. We are glad to note that Dr. Lint, while he reproduces portraits of Galen and other early anatomists, is careful to label them as "imaginary."

The book is of wide interest and is beautifully got up; we look forward to the appearance of subsequent volumes.

SURGERY OF THE EAR.

Die Chirurgie. A Collective Presentation of General and Special Surgery. Edited by Prof. Dr. M. KIRSCHNER and Prof. Dr. O. NORDMANN. Berlin and Vienna: Urban and Schwarzenberg. 1926. Lieferung 8: Surgery of the Ear. By Prof. Dr. A. BLOHMKE. Pp. 278. M.18. Lieferung 9. Pp. 368. M. 26.

IN this section (Lieferung 8) of Kirschner and Nordmann's large system of surgery devoted to the surgery of the ear, Dr. Blohmke does not deal with diseases of the ear entirely from the surgical standpoint; he mentions affections, such as eczema, otosclerosis, and nerve-deafness, of which the treatment is not surgical, and describes the appropriate medicinal treatment. Nevertheless, the volume is not a text-book of otology, for the non-surgical affections are but scantily discussed, and middle-ear deafness without suppuration receives no mention at all. It would have been better if the author had confined his attention to the surgery of the ear. The book is well and clearly written and shows evidence of having been compiled from Dr. Blohmke's personal experience. He has sound things to say on the participation of the mastoid cells in any acute inflammation of the middle ear, and on the fact that mastoid tenderness during the first few days is not an alarming symptom and certainly not an indication for antrotomy. He is on less firm ground when he objects to the use of glycerine and carbolic drops for the relief of pain on the ground that they veil the drum and delay the perception of the correct moment for paracentesis; they can easily be mopped away during examination, and are invaluable for the relief of pain in many cases of earache which never require paracentesis. In those cases which do require it they help to render the meatus sterile. After antrotomy, Dr. Blohmke considers it necessary to keep the posterior wound open down to the antrum until the middle-ear is dry, and does not approve of any form of complete suture. Antrotomy and radical mastoid operations are well described, as is the chosen operation on the labyrinth, that of Jansen and Neumann. For otogenous meningitis the author considers lavage of the cerebro-spinal cavities of doubtful value and repeated lumbar puncture the only reliable method of treatment after the septic focus has been removed from the ear. The illustrations are sufficiently numerous and very good; there is a short table of contents but no index.

Lieferung 9 of the work deals with the surgery of the abdominal wall, of external hernias, of the peritoneum and omentum, and of the appendix, and the fact that 360 closely printed pages are devoted to these subjects will convey some idea of the exhaustive manner in which they are treated. The volume is well arranged and it is possible in a moment to look up any particular point on which information may be required. The illustrations are excellent.

THE PSYCHOLOGY OF THE THINKER.

By I. B. SAXBY, D.Sc., Lecturer in Education, University College, Cardiff. London: University of London Press, Ltd. 1926. Pp. 355. 7*s*. 6*d*.

THE outstanding characteristic of Dr. Saxby's book is the ingenious combination of the engram theory of Semon, the configuration theory of Koffka, and the dynamic theory of the unconscious of Freud. The first may be regarded as a neuro-psychological fiction which attempts to explain diagrammatically the way in which habits and instinct processes are laid down in the nervous system and the way in which stimuli evoke or activate such processes; the second is a formulation of the psychological process of the formation of wholes out of which experience is made and on the basis of which action is possible; the third is a theory based upon a study of abnormal psychology which attempts to explain the manner in which overt acts and traits of personality are governed by affectively driven systems which lie in the main outside the field of awareness. The author has attempted to show that these affectively driven systems, with the instincts as their nuclei, are themselves to be regarded as configurations in Koffka's sense of highly integrated wholes of which the parts are reciprocally dependent upon one another. These configurations again can be regarded as neurologically engrams or patterns of a complicated reflex order which are activated or ecphored when the appropriate or apparently appropriate stimulus pattern appears. It is difficult at times to discover when the author is referring to an engram and when to a configuration. Such distinction in a complex subject should always be clear. In the first place, engrams are laid down in parts and grow together into patterns as result of neurological repetition along the same or associated paths, whereas configurations are wholes as soon as they appear in experience or are utilised in an act. The distinction, of course, only exists as long as the distinction between body and mind exists, and if the latter distinction is only one of aspect then the terms engram and configuration are themselves terms having the same meaning but expressed in two languages. However this may be, Dr. Saxby has written a readable book illustrated, as every good psychology should be, from all fields of knowledge. Her references range from Köhler on apes, to Trotsky on Lenin, and her illustrations are gleaned from the practical field of education which she has cultivated to good effect; in addition, she has made use of psycho-analysis by the practice of it. Her views upon it are therefore

positive and first hand. The affective life is not alone considered in her book, but the growth of logical thinking is fully dealt with in its relation to the feelings and those unconscious complexes which colour our conscious and apparently logical processes. This brings the author to consider concepts in the light of Vaihinger's theory of fictions, and it is no little tribute to her intellectual honesty that she classes the term engram amongst them.

ST. BARTHOLOMEW'S HOSPITAL REPORTS.

Vol. LIX. 1926. London: John Murray. Pp. 206. 21*s*.

THE fifty-ninth volume of the reports contains ten articles, an obituary notice of Joseph Arderne Ormerod, reports of certain societies and lists of subscribers, prize winners, books added to the library, and so forth. Sir D'Arcy Power contributes an interesting historical survey of the rebuilding of the hospital in the eighteenth century, and Prof. F. R. Fraser reproduces his report to the Rockefeller Foundation on the medical schools of America. On the surgical side Mr. W. Girling Ball reviews 200 consecutive cases of perforated gastric and duodenal ulcer, concluding a masterly analysis with full case records. Sir Thomas Horder has written an absorbing article on Vaquez's disease, dealing more particularly with the complications and giving notes on seven cases. On the pathological side Dr. C. C. Twort discusses some of the problems associated with immunity and the specific therapy of tuberculosis. The other articles in the volume are of a high standard and carefully chosen, and the book is attractively bound.

MEDICAL GYMNASTICS.

Medical Gymnastics and Massage in General Practice. Second edition. By J. ARVEDSON. Translated and edited by MINA L. DOBBIE, M.D., B.Ch., Medical Officer, Chelsea College of Physical Instruction. London: J. and A. Churchill. 1926. Pp. 284. 8*s*. 6*d*.

THE second English edition of Dr. J. Arvedson's book on medical gymnastics has been brought up to date, and should well serve its purpose of making disease intelligible to those who have to carry out treatment in the form of remedial exercises. The practitioner or student of medicine will also find the aims and methods of the Swedish system of gymnastics well set out, and the book will enable him to order treatment suitable to his cases. Certain parts of the text are open to criticism from the strictly scientific point of view; but the volume makes no pretence to be a miniature text-book of medicine and surgery, and it gives a sound enough outline of the conditions important from the point of view of the expert in physical therapy.

JOURNALS.

JOURNAL OF PATHOLOGY AND BACTERIOLOGY. October, 1926.—Foreign particles, the reticulo-endothelial system and anæmia, by A. R. Elvidge (Montreal). Particles of quartz, indian ink, carmine, or trypan blue injected intravenously in rabbits cause the appearance of a large number of nucleated red cells in the circulating blood, and repeated injections give rise to more or less anæmia.—Experimental uric acid nephritis, by J. S. Dunn and C. J. Polson (Manchester). The effect of urates on the kidneys has been the subject of much speculation. It needs large doses to produce any demonstrable effect in rabbits; 0·5 to 1 g. lithium monourate intravenously causes necrosis of the ascending limb of Henle's loop, leaving the convoluted tubules free. This is apparently due to the precipitation of the excreted urate in that part of the tubules. This lesion causes oliguria and lowers the urea-concentrating power of the kidney, and there is considerable increase in blood-urea. This is compatible with the authors' previous suggestion that increase of blood-urea after injury to tubular epithelium is due to abnormal reabsorption of urea along with the normal reabsorption of water.—Further observations on a flocculation reaction for the serum diagnosis of malignant disease, by H. J. B. Fry (London). An extract of breast cancer containing the saline-insoluble, acetone-insoluble, alcohol-soluble substances flocculates with the serum of about 75 per cent. of cases of carcinoma, sarcoma, or lymphadenoma, and with not more than 25 per cent. of cases without malignant disease. Extracts made from rat carcinoma and from normal human pancreas give similar reactions.—The pathogenicity for mice of the normal and rough forms of Gaertner's bacillus, by A. N. Goyle (London.) The normal form is more virulent and more toxic than the rough variant.—Atheroma of the aorta, by J. B. Duguid (Aberdeen). Atheroma is essentially due to impairment of the elasticity and pliability of the intimal tissues, and the actual lesions are caused by the wrinkling of the intima in the diastolic recoil of the vessel. This deformation is especially liable to occur when the artery is held more or less firmly in the surrounding tissues by branches.—The influence of the vasomotor state of the peripheral blood-vessels on the leucocytic content of the blood, by A. F. B. Shaw (Newcastle). The leucocytic content of peripheral arterial blood is not altered by vasomotor changes, but in the veins vasoconstriction leads to an accumulation of leucocytes with a rise in the total without any change in the differential count. This is not due to concentration of the blood.—A case of osteoclastoma (myeloid sarcoma, benign giant-cell tumour) with pulmonary metastasis, by E. F. Finch and H. H. Gleave (Sheffield).—A disease of rabbits characterised by a large mononuclear leucocytosis caused by a hitherto undescribed bacillus, *Bacterium monocytogenes*, by E. G. D. Murray, R. A. Webb, and the late M. B. R. Swann (Cambridge).—The agglutinin content of tissue fluid, by J. S. C. Douglas and F. W. Simson (Sheffield). Tissue fluid is the liquid which is in neither blood-vessels nor lymphatics and which is drawn upon to make up the volume of the blood after hæmorrhage and may be sucked from the tissue spaces into the blood (and so obtained for examination) by the intravenous injection of strong solutions of dextrose or sodium sulphate. The authors show that in both actively and passively immunised animals the tissue fluid contains antibodies (agglutinins), that these can pass through the capillary wall into the blood, and that the endothelium presents a partial barrier.—The influence of the removal of the thyroid, parathyroid, and sexual glands and of thyroid feeding upon the regulation of the body temperature of rabbits, by V. Korenchevsky (London). Thyroidectomy reduces the capacity of the animal to produce heat in response to external cooling so much that young rabbits may die; thyroid feeding restores their reactions to normal. Removal of the sexual glands has a similar but much less marked effect. Parathyroidectomy has no effect.—The influence of optimal proportions of antigen and antibody in the serum precipitation reaction, by H. R. Dean and R. A. Webb (Cambridge). The rate at which particulation occurs in a mixture of horse serum and the corresponding antiserum depends on the relative proportions of the two ingredients. The mixture which precipitates quickest is not the one which ultimately yields the greatest weight of precipitate.—Bacteriological and experimental observations on a case of rat-bite fever, by T. J. Mackie and E. N. McDermott (Edinburgh). *Spirillum minus* was isolated by inoculating enlarged glands into guinea-pigs. Rat-bites are probably infective by the organism appearing in the conjunctivitis which infected animals show and passing down into the mouth.—Identification of the Sonne dysentery bacillus in England, by Hilda A. Channon (London). The Sonne bacillus, originally found in Denmark, has been isolated from a case of diarrhœa at University College Hospital.—Obituary notices of Charlotte Iris Fox, Camillo Golgi, William Boog Leishman, Stewart Stockman, and Meredith Blake Robson Swann.

THE LANCET.

LONDON: SATURDAY, OCTOBER 16, 1926.

WHAT THE SURGEON SEES.

IN his stimulating oration which we print elsewhere in this issue Sir BERKELEY MOYNIHAN reminds us that the surgeon nowadays is something more than the man who cures his individual patients with a direct simplicity which must sometimes move the envy of his brother physician. LISTER opened up a range of possibilities in the way of surgical technique which is perhaps now almost exhausted, at any rate along accepted lines; and until some undreamed-of revolution comes along no great development of the surgeon's manual achievements is to be looked for. What now remains for him to do is to bring his brains into play, to do more for his patient before operation, to study more carefully what happens to him afterwards, and to put all his information together to find out about disease. There was a time when discovery lay mostly with physicians who had leisure to think while surgeons were busy doing things; a surgeon's training was mainly anatomical, a physician's in physiology and pharmacology. But that is now past and gone, and Sir BERKELEY MOYNIHAN urges on those who are embarking on a surgical career that the faith and practice of investigation is as necessary for them as the acquisition of the technique of operation.

All modern surgeons have great opportunities to add to our knowledge of the natural history of disease, and no one has shown more clearly than the Harveian orator himself that they can be used to most excellent purpose. What he has aptly called "the pathology of the living" has completely revised our knowledge of the abdominal viscera. Some of our readers will remember the happy outcome some years ago of Sir BERKELEY MOYNIHAN'S invitation to the sceptical Dr. A. F. HURST to come to Leeds and see in the operating theatre some of the duodenal ulcers of which he so much doubted the existence. Splenectomy is throwing a flood of light on a number of obscure diseases grouped as splenic anæmias, acholuric jaundice, and purpura, and is giving rational explanations for which indeed the hæmatologist and physician had well prepared the ground but could get no further. Our whole knowledge of biliary pathology has been put on a different level of validity, helped by conveniently simultaneous progress by the physiologists, and even in such minor matters as blood transfusion the stimulus has come from the operating theatre. The "pathology of the living" has indeed been fruitful, and we may confidently anticipate a pretty long career of active usefulness before its possibilities come near exhaustion. But if there was at one time a little less sympathy than there should have been between the pathologist in the post-mortem room, who had something safe in a bottle which could be looked at again and again till he was quite sure what he saw, and the surgeon with his vivid accounts of what he had seen hurriedly in a desperate fight with a human emergency, we hope that those who exalt the "pathology of the living" will view more tolerantly the methods and results of the morbid anatomists.

When all is said, the event of death can hardly remove a lesion or alter its essential features. Early or minute foci of disease may be less easily recognisable in the cadaver than in the living patient, largely because of the absence of those disturbances of function which point to their presence; but to admit this is merely to admit the necessity for the more accurate and careful practice of naked eye and microscopic morbid anatomy. The blind worship of the bottled specimen is as dead as Druidism; modern morbid anatomy is not the study of pathological specimens but of pathological processes. The attitude of the modern pathologist is essentially dynamic. He knows, and to do him justice usually teaches, that each of his specimens has a past as it would have had a future had not death or the surgeon's knife intervened. He deals with lesions which have been arrested, and it is his business to know not only the processes which have led up to the particular stage of the disease he is studying, but also the developments which might be expected to occur. Sir BERKELEY MOYNIHAN, of course, makes no suggestion that autopsies can no longer be expected to tell us very much, but the less thoughtful admirers of his methods sometimes decry the older teachings. A first-rate new road does not necessarily make the old road useless, and morbid anatomy still has its discoveries to report, and fresh ones yet to make. There are many roads to the understanding of disease; what is needed is that they should all meet.

THE HEALTH EDUCATION OF THE PUBLIC.

THE aims which ought to be before those who consider that the medical profession has a mission to educate the public on health questions through the lay press, as well as the methods advisable for carrying out those aims, were the subject of a lucid address by Sir THOMAS HORDER on Tuesday last, the occasion being a meeting of the St. Pancras Division of the British Medical Association. Save for a few preliminary remarks we publish the address in full, for though the subject has been much discussed, and may seem to some to have been over-discussed already, it remains one of great interest to the medical profession at large, while frequent debate has led to no practical result. And if we are to be guided by the curiosity that has been manifested in many quarters as to what Sir THOMAS HORDER was going to say, the public is as much interested as the medical profession. That curiosity will undoubtedly be disappointed in certain respects, for the speaker made no fiery attacks upon individuals and abused no authorities or associations. He acknowledged the good that might be done through the medium of publicity, while indicating the forms of publicity that were inadvisable, either because the teaching could not be adequate, or because the motive for publishing it might be mistaken. All true; all often said; but none the less worth saying again in Sir THOMAS HORDER'S convincing manner, lest the fundamental facts should still escape our minds.

It would be unnecessary to inform a medical audience that public instruction on health matters is desirable, if it were not for those who cannot bend the proud professional neck to meet the least relaxation of rules of behaviour instituted in days when any lay public to whom appeal was made formed necessarily a completely uninformed audience. For sticklers Sir THOMAS HORDER had the practical intimation ready "that the public has decided that it wants health talk and means to get it." And at this point he made a classification of the forms of public instruc-

tion, either in respect of general health or in respect of personal hygiene; and this should be of assistance to medical men needing guidance on the ethical side. After a caustic analysis of the kind of medical article which the public seems to want (which must be the kind of medical article which certain journals intend to give), he drew a distinction between "information" and "instruction" which may well be borne in mind by those who consider it their duty to sign hygienic messages in the lay press. Far greater latitude, he explained, could be allowed to those who are "telling the story" of a disease—i.e., who are giving general information about that disease—than to those who propose to instruct the public upon its treatment. He was following in spirit here the classification implied by the General Medical Council when dealing with the subject of advertisement in the Warning Notice issued to the profession; this Notice categorises the actions commission of which may come in for unfavourable censure, and "telling the story" would entail no professional risk on the narrator. But it is well to remember that even such narratives with the signature of a doctor attached, may be open to objection. The information on medical questions regularly disseminated to the public from the Ministry of Health will serve as a pattern for the kind of article the publication of which in the lay press is all for good, but the issue of pamphlets from a State bureau should not be regarded as forming a precedent for the action of any individual medical man who desires to write signed medical articles of an informative nature. The very publicity which redounds to the credit of a bureau or an association may damage the reputation of any doctor.

All Sir THOMAS HORDER'S skill in putting forward his arguments failed to disguise the fact that, certainly through no fault of his, the subject is left very much where it was. The sort of signed medical article which is quite undesirable and which is stigmatised as such by the General Medical Council, was condemned—at any rate by implication, and the article which everyone knows to be blameless, and which often must be useful, was acknowledged as such. But who is to adjudicate on the articles which fall between the two extremes; who is here to appraise when it is obvious that the powers of the General Medical Council cannot be invoked? And what is to be the penalty? And how is it to be enforced? A resolution was passed by the meeting, suggesting the formation of a control committee to help lay editors to estimate the worth of medical contributions to their columns. Undoubtedly such a body might be of real use, but the difficult task remains of setting it up in such a form, and with such a composition, that editors of lay papers would respect its views. The Federation of Medical and Allied Services, as Sir THOMAS HORDER suggested, may have here an opportunity for constructive work, of value alike to the public and the medical profession.

OUR KNOWLEDGE OF APHASIA.

Dr. HENRY HEAD has published in two large volumes,[1] amounting to nearly 1000 pages, a complete exposition of those views of his on the problem of aphasia with which the profession has to some extent already been familiarised through the medium of various communications in journals. The first volume contains a historical retrospect of some 140 pages, a vastly interesting section, which begins with some account of the work of the phrenologist GALL and passes in review various stages in the development of our knowledge of aphasia by summarising, sometimes at length, the contributions associated with the names of BOUILLAUD, BROCA, HUGHLINGS JACKSON, PIERRE MARIE, HENSCHEN, VON MONAKOW, and others. This historical section is frankly selective, none the less, in the sense that it deals almost entirely with such views as in the author's opinion indicate acceptance of that general approach to the subject which he himself adopts—the psychological approach. Dr. HEAD admits with openness that he has decided in this section to ignore previous contributions which have no direct bearing on his own observations and with which he is in complete disagreement. Thus there is little or no attempt at comprehensive criticism, which for that matter would doubtless be out of place; certain of the tenets of the late Dr. CHARLTON BASTIAN are dismissed as "disastrous"; HENSCHEN'S method inevitably suffers from "grave defects," but no serious effort is made, as not being felt to be necessary, to deal seriatim with previous hypotheses. In the author's words: "Round and round like a stage army moves the procession; the clinical appearances are identical, but each fresh group of observers views them with new eyes and with different preconceptions."

Dr. HEAD'S theories are based largely if not entirely on the results of his examinations of clinical cases, examinations carried out according to a scheme of his own, full details of which are furnished the reader. For this scheme is claimed novelty and originality: it certainly contains both elements. In addition to some more or less usual forms of clinical investigation there has been elaborated a long series of tests of a somewhat different kind, embodying plans for detecting behaviouristic reactions to stimuli by various sense avenues. Speech, according to Dr. HEAD, is behaviour, and it is legitimate to test behaviour along lines that have seemingly no direct connexion with speaking, reading, or writing. Not a little, therefore, of the manner and matter of these ingenious tests will appear to the neurologist to be outside the realm of speech altogether, as commonly understood; and the same is true of other tests supplementary to the scheme itself. It is difficult to comprehend how a game at billiards, or throwing paper balls into a concealed basket, or setting a breakfast table, or threading a quadrilateral frame for a beehive, can be raked in as varieties of the psychological function which men call speech, but Dr. HEAD is in no way perturbed at the idea. He does not accept, and is, indeed, very critical of, the usage of the terms agnosia and apraxia in respect of disorders such as he himself classes with aphasia; he considers they are on a *lower* psychological level than those of speech and have little to contribute to his theory. This is set forth towards the end of his descriptions of the clinical manifestations he has been studying, and is to the following effect: disorders of language are disorders of "symbolic formulation and expression." This definition the author is at once careful to qualify, in the sense that it is not to be thought to define the limits of speech defect. "Any form of mental behaviour is liable to suffer which demands perfect reproduction and use of any symbol between its initiation and its fulfilment." Evidently, then, Dr. HEAD has immeasurably widened the ordinary conception of speech, and in so doing declares it is not possible to "include within one categorical definition all those activities which experience shows to be affected." The reader at this point will naturally ask what is signified by "symbolic formulation and expression," and the answer is: "a mode of behaviour in which some verbal or other symbol plays a part between the initiation and execution of the act." In another place the author states that these disorders of behaviour "extend on the one hand from mechanical aptitudes to exercises in formal logic on the other." We are doubtful whether an all-embracing conception of this kind will have that clarifying action on the

[1] Aphasia and Kindred Disorders of Speech. By Henry Head, M.D., LL.D., F.R.S., consulting physician to the London Hospital; honorary fellow of Trinity College, Cambridge. In two volumes. Cambridge: University Press. 1926. Pp. 549 and 430. £3 3s.

problem which its author earnestly desiderates. It must by definition include numerous intellectual procedures resulting outwardly in behaviour such as no one who believes in common sense can consider speech behaviour, while within its generous scope the functions of speech as ordinarily understood are surrounded by a host of other intellectual functions and are in danger of losing their individuality. Dr. HEAD endeavours to simplify current ideas on speech, not so much by considering it as part of a larger psychological function as by adding to it many intellectual activities that have hitherto been judged to belong to a non-speech psychical series.

From the most painstaking examinations of some 23 clinical cases (the details of which are recorded at length in the second volume), based on his own scheme, the author comes to the conclusion that four varieties of speech disorder can be usefully differentiated; these are denominated by him verbal, syntactical, nominal, and semantic aphasias respectively. While in the case of each of these a more or less outstanding clinical feature justifies its being utilised to describe the form taken by the group to which it belongs, the author makes it clear that he neither regards his types as clean-cut entities nor wishes it to be imagined that functions are disordered in any particular one which escape in the others. The terms he employs are indicative, but not definitive. He does not accept any localisation of the function of speech, an intellectual function; it is perhaps therefore a rather unexpected concession to localisationists that Dr. HEAD has set himself the arduous task of endeavouring to ascertain from the site of the scalp and cranial wounds of his war cases (which form his clinical material almost in toto) what portion of the cerebral cortex has been injured. This is the least impressive section of a monumental contribution; the method employed is open to obvious neuropathological objections, and the statements made will in some respects scarcely stand investigation. It is claimed, for instance, that in gunshot wounds of the head the effects of the injury tend to spread themselves over the cortex, and that in civilian cases most of the lesions resulting in aphasia are subcortical, and the contention is made that war wound cases present great advantages over civilian cases—a view which has already been adversely criticised by more than one contributor to the problem of aphasia. Towards the end of his first volume the author remarks that "no criticism of my results is valid unless the patient's condition has been explored by similar or more perfect and extensive methods." Dr. HEAD is so conscientious a worker and so minute an observer that there is no thought of questioning his results; on the contrary, if war wound cases are examined by Dr. HEAD'S technique the results will doubtless be the same. The points at issue will consist less in the class of data extracted from clinical examinations of a particular type of material by a particular scheme than in the nature of that scheme, in the interpretation of the data, and in the hypotheses based thereon. He has set a high standard of testing psychological function, and incidentally has amply justified his objection to much that has hitherto been recorded in the literature of aphasia—the investigations have been woefully fragmentary and incomplete. He has proved the necessity of using graduated tests, and has explained and justified his argument that such terms as alexia, agraphia, and so forth are too absolute; they fail to take into account the variability of the symptoms in the average case. Undoubtedly misused in the past, the clinician will have to be more discriminating in his use of them in the future, even though he should be unwilling, pace Dr. HEAD, to throw them into the discard.

No one who patiently peruses these volumes can lay them down without feeling deeply impressed both by the author's erudition and his infinite attention to detail. No such elaborate monograph on aphasia has ever been published in English before. While it contains an unusual amount of repetition and reiteration (quite apart from useful summaries provided at appropriate intervals), it is provocative of thought and disturbing to preconceptions, and herein, we think, lies part at least of its value. Dr. HEAD with disarming candour declares that the results he has obtained "are of little direct practical value to the physician," and in one place there is evidence of a feeling of regret on the author's part that cases of aphasia are seen by the neurologist when it is really the psychologist who should come under their fascination and utilise them for the study of the interaction of body and mind. This is doubtless because his own approach is from the latter's standpoint; believing, as he does, that physiological and anatomical considerations are altogether secondary, he naturally develops them very little. Whether such descent on the problem from above, so to speak, is preferable to ascent from below, is perhaps beside the point; yet it would be unwise to belittle the contribution of the neurologist. The lesson *he* has to learn is that the study of the mind in disease will not be facilitated by neglecting the complexity of the problem.

THE FREEDOM OF MEDICINE.

Dr. C. O. Hawthorne, in delivering the introductory address to the students at the Durham University College of Medicine, Newcastle-on-Tyne, on Oct. 8th, dwelt especially on the influence which the atmosphere of a university life should have in the cultivation of independent judgments and the development of personal views. The university should provide, he said, such a measure of freedom, tempered with such a degree of discipline, that those who submitted themselves to the training were fitted for the larger opportunities and the display of individualism in practical life, with its corresponding burdens and responsibilities. He claimed for the profession of medicine that it supplied just such an atmosphere, one in which a man's work would give him the opportunity to display that initiative in judgment and that self-control which are the two great benefits offered by university education. The argument for a university training for medical men could hardly be better put, for in medicine the individual opinion and the individual action are neither enforced on the one hand nor restrained on the other by an arbitrary or quasi-infallible authority. This was not so in the past either in medicine or in any branch of human wisdom, but medicine is alike so rapidly developing and so widely finding affinities between itself and associated sciences that in medicine response to central authority cannot be made into a mechanical affair. The university training is sure to inculcate sufficient respect for tradition, but Dr. Hawthorne's message to the Durham students, that it should also supply the qualities necessary for arriving at independent judgments is not commonly recognised. As a matter of fact, all medical training in this country is to-day of university pattern to a large extent—that is to say, the modern medical school is no longer a one-sided technical training institute. The curriculum, it is true, after the preliminary stages, has no further connexion, and does not mention, what used to be called literæ humaniores, but the modern medical student will find that appreciation of literature is apposite to his work, while in its various special branches that work is in distinct relation with such other university faculties as natural philosophy, mathematics, law, and even divinity.

GUILD OF ST. LUKE ANNUAL FESTIVAL.—This year the annual service of the Guild will be held at Westminster Abbey on Sunday, Oct. 17th (the eve of St. Luke), at 6.30 P.M., when Canon Sopwith will be the preacher. A limited number of seats will be reserved for members of the Guild, but it is hoped that other members of the medical profession will also attend. Members who desire to robe are invited to assemble in the Jerusalem Chamber not later than 6.15 P.M. Holders of tickets should enter the Abbey by the West Cloisters' door through Dean's Yard. The annual corporate union of the Guild will be celebrated at the Grosvenor Chapel, South Audley-street, at 8.15 on the morning of St. Luke's day. The annual chapter will be at King's College, Strand, at 5 P.M. on the same day.

Annotations.

"Ne quid nimis."

THE RELATION BETWEEN CANCER AND TUBERCULOSIS.

THERE has been some talk, not all of it loose, of an antagonism between cancer and tubercle. A recent inquiry [1] at the Harvard Department of Pathology brought to light only 18 cases of concurrent malignant and tuberculous disease of the female breast, but the authors themselves regard the rarity as sufficiently explained by the different age-incidence of the two diseases. Delbet and Monod [2] initiated a more general discussion of a possible antagonism several years ago, and Dr. T. Cherry, of Melbourne, drew attention recently in our own columns [3] to a possible relation between the steady decline in the number of deaths from tubercle and the equally steady advance of cancer, the two rates being now about equal in England and Wales. He recalled an observation made by Mr. W. R. Williams [4] that when several members of a family had died of phthisis the survivors were very apt to develop cancer and suggested the need for further inquiry. The views of a number of continental authors are summarised in an interesting paper by Dr. G. Ichok, [5] who reaches no conclusion except a warning to the clinician not to forget the possible concurrence of the two diseases. In a recent Italian publication [6] the inquiry has been taken up by Dr. Pasquale Corsonello, of the University of Naples, who recalls the fact that Rokitansky had himself worked on this problem. He describes in detail two cases in which pulmonary tuberculosis was implanted on the cachectic state of cancerous patients. One was a man, aged 42, with a pyloric cancer the size of a large orange and marked signs of phthisis at the right apex with Koch's bacillus in the sputum. The other a man of 46 with a stenosing cancer of the œsophagus and tuberculous infiltration of both apices. The great facility with which cancerous tissue destined to rapid degeneration can be invaded by organisms from the surface or cavities is well known. Menetrier observed that Koch's bacillus may also be met with in such conditions, having gained access through the ulcerated surface or through the lymphatics, and previously latent in the organism. Prof. Corsonello relates two cases which demonstrate this. One a woman, aged 45, with an ulcerating mammary carcinoma the size of a fœtal head. Examination of the exuding pus revealed the usual pyogenic organisms, but Koch's bacillus was not found until a much later date when the patient had been in contact with a daughter who had developed pulmonary tuberculosis with the specific bacillus in the sputum. The second case was a youth, aged 18, suffering from an apical tuberculosis. A tumour of the nature of an osteosarcoma of the iliac bone made its appearance, which two months later softened and tuberculous pus was evacuated. The tumour continued to grow and eventually caused death. The explanation seems to be that the tubercle bacilli found their way via the lymphatics from the lung to the neighbourhood of the neoplastic tissue on which they expended their action as a "locus minoris resistentiæ." Showing that a generalised tuberculosis may arise from the local infection of a malignant tumour, Dr. Corsonello quotes the case of a woman, aged 48, who had suffered for a year from a mammary schirrus with axillary metastasis. The tumour ulcerated and Koch's bacillus was found in the discharge. A month later signs of pulmonary tuberculosis showed themselves, the lungs having been previously healthy as ascertained by radiography. Menetrier considers that neoplasms result from a peculiar evolution of the tissue cells which they acquire as a sequence of a kind of morbid education of "pathological selection"; chronic inflammations, especially tuberculous, are capable of producing this epithelial metaplasia which is the characteristic of the cancerous process. Apart from any criticism of Menetrier's theory, it seems that Dr. Corsonello's cases show that there may be some association between the two processes, tuberculous and cancerous.

[1] L. W. Smith and R. L. Mason: Surgery, Gynecology, and Obstetrics, July, 1926, p. 70.
[2] P. Delbet and R. Monod: Cancer et Tuberculose. Bull. de l'Assoc. pour l'étud. du cancer, 1920, ix., 153.
[3] THE LANCET, 1925, ii., 644.
[4] The Natural History of Cancer, London, 1908, p. 371.
[5] La coexistence, dans le même organe, de lésions tuberculeuses et néoplastiques, Revue de la Tuberculose, August, 1926, p. 625.
[6] Folia Medica, 1926, p. 205.

HEALTH IN THE MERCANTILE MARINE.

Two years ago the Royal Sanitary Institute suggested to the Board of Trade that the classification employed in the Board's report on Deaths of Seamen was out of date and should be remodelled in the light of modern knowledge. The Institute went on to express the view that the compilation of death statistics and the care of the health of men in the merchant service should be given in charge of the Ministry of Health, the Board of Trade not being specially organised for this duty. Similar views have been expressed in our own columns. The pamphlet just issued [1] tells us that, moved by these criticisms, the Board of Trade asked the advice of the Permanent Consultative Committee on Official Statistics, which in its turn referred the matter to a subcommittee of statisticians with a request to examine the statistical basis of the return of deaths, to decide whether death-rates of value could be calculated from it, and whether its classification should be altered. The subcommittee was commissioned further to examine the figures of occupational mortality in seamen given in the Registrar-General's decennial report on the Census, and to consider the propriety of issuing an annual statistical report on the health of the mercantile marine. The pamphlet is the report of this subcommittee, which has been adopted by the Permanent Consultative Committee, Briefly stated, the decisions reached are that criticisms of the return because it does not include death-rates are ill-founded, for the population concerned is too fluctuating and the causes of death too inaccurately reported; that the return should continue to be published, but that the Registrar-General should advise the Board as to the changes necessitated by the inaccuracy of the data, that the Registrar-General should allow both for the seamen "on articles" (i.e., employed) and for those on shore in discussing the occupational mortality of their class; and, finally, that a statistical annual report on the health of the mercantile marine analogous to those of the Army and Navy is impossible, the data being too limited. The report shows how carefully the question has been studied within the limits imposed by the terms of reference, and how difficult it is to decide from the information now available how many British seamen there are in any year, and precisely how many of them died. The present return estimates the number of British, foreign, and lascar seamen and the number of deaths of men "on ships' articles" for the same groups, but when seamen die ashore, as many do, the records do not always distinguish between death of British seamen on British ships or British seamen on foreign ships, or allow for men from the Irish Free State whose sailors are unenumerated. Even the National Health Insurance records of seamen are too little continuous to be of help. No reply has yet been made to the second resolution of the Institute. It seems that because we cannot get a meticulously accurate death-rate for merchant seamen we are to have none at all, but even whole numbers may be informing. The Board's return for 1914 showed that in the preceding 12 years the death-rate of seamen from disease had fallen from 4·8 to 3·4, from accidents, &c., in sail from 18 to 14·6, in steam from 5·9 to 4·3. But statistics are not everything. The Board has a list of all the

[1] Statistics Relating to Health and Mortality in the Mercantile Marine. Report of the Subcommittee of the Permanent Consultative Committee on Official Statistics. London: H.M. Stationery Office. 1926. Pp. 12. 4*d*.

deaths occurring on merchant ships in any year. Has it no medical officer to whom to refer it for criticism and advice with a view to prevention, and why should not that list go over to the Ministry of Health for expert examination and report by a staff skilled in the understanding of medical facts and implications?

MOULDS.

A GREAT deal of work is needed before the identification of moulds will be carried to the bacteriological precision which dissects the salmonellas and types the pneumococci. When a pathologist comes across a mould, he is generally content enough if he can say whether it is an aspergillus or a penicillium; there is no very readily available literature which will help him into any details which his curiosity may ask for. A book written by two members of the staff of the Microbiological Laboratory of the United States Department of Agriculture may therefore fill a useful place.[1] The greater part of the book is descriptive and systematic, and this section represents well the determination of the Americans to give expression to their appreciation of the great truth that sound systematics is the only sure foundation of experimental biology. There is, however, also a general introduction which summarises what is known of the physiology and pathology of aspergilli. They are used in a variety of domestic and commercial industries—to ferment soy beans and fish in the East, to improve the flavour of coffee, to make citric acid—and are well known as the cause of a fatal disease of the air-sacs in birds, in a somewhat dubious relation to inflammations of the meatus and other parts of the skin in man, and as gaining a lodgment in diseased lungs. If the obscurities of most of their pathology are to be cleared up, an accurate identification of species is the first necessity; towards this the book should be of real value.

RESPIRATORY VARIATION OF THE PULSE.

IN his classical work on the cardiac arrhythmias Mackenzie differentiated between those forms of irregular pulse which are, and those forms which are not, of serious prognostic significance. He pointed out that almost constantly in healthy children and not uncommonly in young adults the pulse frequency tends to vary with the phases of respiration, increasing during inspiration and decreasing during expiration. In addition to this juvenile type of irregularity, as Mackenzie called it, another form of sinus arrhythmia is occasionally met with in which the pulse-rate waxes and wanes in a perfectly regular fashion, but independently of respiration. In both these conditions the pulse is of smaller volume during the rapid than during the slow phase. A more extreme rhythmic type of variation in pulse amplitude, known as the pulsus paradoxus, occurs in association with chronic mediastinitis and is there probably attributable to direct compression of the subclavian artery by traction of the surrounding tissues during inspiration. The variation in heart-rate associated with respiration is generally attributed to alterations in vagal tone, and provided the minute-volume of the heart remains constant the output per beat will vary inversely with the pulse-rate. There is, however, a second factor which comes into play, for the negative intrathoracic pressure during inspiration tends to dilate the pulmonary vessels and so to accelerate the blood flow through the lungs. Hence the venous filling of the left auricle is increased and this leads to a corresponding increase in the output of the left ventricle. The immediate result of dilatation of the pulmonary vessels, however, is to enable them to accommodate a larger quantity of blood; so there is an appreciable lag between the commencement of inspiration and the augmentation in the systemic output. In a recent paper in the *American Journal of Physiology* Prof. R. T. Barry has called attention to the fact that, in estimating the systolic blood pressure in man by the auscultatory method, the phases of respiration have to be taken into account, for with a given compressing pressure in the armlet the pulse-beat may produce sound during one phase of the respiratory cycle whilst during the other phase it may fail to do so. Similarly in those rarer cases, to which we have referred above, where there is a slow but rhythmic variation in pulse frequency extending over a series of respiratory cycles, during the phase of more rapid heart action the Korotkow sounds may cease to be audible. This is an interesting observation from the physiological standpoint, but clinically it is of little significance, for a variation in systolic pressure of less than 10 mm. is for practical purposes negligible in the diagnosis and treatment of disease, and a rhythmic variation greater than this is not likely to be attributable to respiratory factors except in those conditions which give rise to the pulsus paradoxus.

TESTS FOR COLOUR VISION.

INGENIOUS devices for testing colour vision are always of interest. The well-known principle of Stilling's pseudo-isochromatic cards, of which a new edition has just been issued,[1] is that the dichromic will be unable to decipher figures composed of red dots on a background of green dots, and similarly other pairs of complementary colours. Various shades are used, and in this edition cards are included which are meant to demonstrate a diminished blue-yellow sensitivity and diminished sensibility for violet. One card is constructed in which those alone who have a heightened sensitiveness for colour contrast and variations in brightness can make out any figures, and some charts are added for the detection of malingerers. The construction of these cards is based on the trichromic theory of colour vision. Some years ago Edridge-Green published somewhat similar ones illustrating his own theory, and these were designed to detect all degrees of colour defect. The chief advantage of cards of this description is the ease and rapidity with which they can be used. For accurate testing in difficult cases it is generally admitted that the use of spectral colours by means of a lantern is the best test.

Another set[2] of cards has reached us on which are painted oblongs or dots which to the normal eye in daylight all look alike—grey. They are described as "Umschlagfarben," this term being used to indicate combinations of colour which appear alike to the normal eye by daylight but by artificial light seem decidedly different, some spots appearing more red, others more green. The subject of partial colour blindness, on account of his greater sensitiveness to either red or green, as the case may be, is able to recognise by daylight these differences of colour which are apparent to the normal sighted only by artificial light. The cards are made on the same principle as the Stilling ones, but constitute a more delicate test which can only be employed in special conditions of daylight. The technical difficulties in the reproduction of the colours took two and a half years to overcome. It is claimed that the test is a quantitative one, able to detect not only the presence but different degrees of colour defect and, therefore, of practical use not only to the ophthalmologist but also to those technical industries where good colour vision is of importance. It seems unlikely that under the climatic conditions of Great Britain the method could be widely adopted with success unless an artificial daylight installation was also provided.

[1] The Aspergilli. By Charles Thom and Margaret B. Church. London: Baillière, Tindall and Cox. 1926. Pp. 272. Figures and microphotographs. 22*s.* 6*d.*

[1] Stilling's Pseudo-isochromatic Cards for Testing the Colour Sense. Seventeenth edition. Edited by Prof. E. Hertel, Director of the University Eye Clinic at Leipzig. Leipzig: Georg Thieme. 1926. M.5.70.

[2] Tafeln mit Umschlagfarben zum Nachweis von Relativer Rot- und Grünsichtigkeit. By Dr. med. Ernst Wolfflin, Professor at the University of Basle. Same publishers. 1916. M.18.

SEMINAL VESICULITIS.

AN infected seminal vesicle can, as Mr. Frank Kidd has shown, remain blocked and full of the infecting agent for many years, and in an article which appeared in THE LANCET last week on the surgical management of seminal vesiculitis from the pen of the late Dr. A. Reith Fraser, lecturer in venereal diseases at the University of Cape Town, and Mr. L. B. Goldschmidt, surgeon to the New Somerset Hospital, Cape Town, it was pointed out that no part of the urogenital system suffers so much from neglect as do the seminal vesicles. These authors pass under review the various methods of treatment which have been tried in the acute stage and after the infection has become chronic, and they give the results of their own very large experience of such methods at Cape Town. Their conclusions are noteworthy in maintaining an admirably balanced judgment. Whilst relying on methodical vesicular massage as the sheet anchor of treatment, they admit the value of adjuncts to this treatment, and especially the value, in rebellious cases, of vasostomy, devised by Prof. W. T. Belfield, of Chicago, and substantially improved[1] by Mr. Kidd three years ago. For washing out the vesicles they found effective a 25 per cent. solution of argyrol; its use shortened the average length of treatment by three-quarters and often converted a case which was not responding to conservative measures into one that responded. Only when vasostomy fails, but not before, is the severer operation of vesiculectomy in place. Dr. Fraser and Mr. Goldschmidt's paper, although it records no new methods of treatment, deserves careful study from all who have to do with urogenital disease, for it codifies the therapeutic armoury of vesiculitis and appraises the exact value of the several weapons which it contains. Dr. A. L. Wolbarst, of New York, has also called attention recently [2] to the singular neglect by American surgeons of the not infrequent infection of prostate and vesiculæ by the colon bacillus, due, he believes, to chronic intestinal auto-intoxication. He also has found favourable results to follow vesicular irrigation by means of Belfield's operation.

MALIGNANT MYELOID SARCOMA (OSTEOCLASTOMA).

THE ordinary myeloid sarcoma of long bones is justly regarded as the most certain example known in human pathology of a tumour which has the local invasive character of a malignant growth, while it may be trusted not to disseminate and may be safely treated by local removal. A case recorded by Mr. E. F. Finch and Dr. H. H. Gleave, of Sheffield, in the current number of the *Journal of Pathology and Bacteriology* (reviewed on another page), reminds us that this tumour does not always keep to these rules. The case has a peculiarly instructive history. A man of 49 slipped on ice in 1917 and fractured the lower third of his right femur; good apposition could not be obtained and at operation the bone was found to be very soft, which was supposed to be due to osteitis deformans. The fracture healed and, except for some pain and swelling 18 months afterwards, the man went on fairly well till 1921, when he came back to hospital with a swelling above his right knee. The radiologist reported myeloid sarcoma and a re-examination of the 1917 skiagrams showed evidence of a medullary tumour which had been overlooked. The tumour was now too large for local removal to leave a useful leg and amputation was undesirable. But at the end of 1924 he was disabled by a spontaneous fracture and the leg was taken off in January, 1925, eight years after the patient was first seen and ten years after the first symptoms of "rheumatism" in the right knee. In October, 1925, he returned with a painful swelling in the stump and spitting blood-stained sputum, and died in January, 1926. Post mortem there was extensive recurrence in the stump, a number of secondary growths in the lungs, but no metastases elsewhere. Histologically, the primary growth, the recurrence, and the secondary nodules all showed the typical characteristics of giant-celled myeloid sarcoma. The clear account given by the authors requires no comment. But we may note with approval their proposal that the terms "myeloid sarcoma" "myeloma," and "benign giant-cell tumour" should be dropped in favour of "osteoclastoma," a title which is less liable to confusion and which adequately summarises the view that these growths are essentially polymorphous-celled sarcomas which differentiate on the one hand into fibroblastic tissue and on the other into giant cells analogous to osteoclasts—the two elements which in various proportions make up the developed tumour.

[1] THE LANCET, 1923, ii., 213.
[2] Internat. Jour. of Med. and Surg., December, 1925.

TOBACCO AMBLYOPIA.

WE may have to delete from the list of ailments due to tobacco one in which the specific effect of nicotine has hitherto been almost undisputed—namely, tobacco amplyopia. Dr. Léopold Bussy, in a recent issue of the *Journal de Médecine de Lyon*, makes out a case for the supposition that there is no such thing as true tobacco amblyopia. He holds that nicotine, like other toxins, may play a minor part, but that toxic retrobulbar neuritis is practically always due to the abuse of alcohol. His description of the clinical picture agrees with that of Osler: the lesion is bilateral and shows itself in a loss of capacity to distinguish first red and then green, and in a blurring of objects at the point of focus; the peripheral vision remains unimpaired. The condition appears to be on the increase in France and to affect every class impartially. Dr. Bussy suggests that its growing frequency may be due to the redistribution of wealth which has taken place since the war and which has afforded an opportunity for over-indulgence in alcohol to persons who were obliged previously to observe moderation. He bases his argument on a study of the literature, in which he notes that the ætiological factor indicted is practically always alcohol and very often both alcohol and tobacco, but rarely if ever tobacco alone. Even when tobacco seems to be the chief culprit there is nearly always another toxic factor present, such as syphilis or a septic focus. The fallacy, he says, originates in an ancient traditional superstition. The type of the smoker-and-drinker has invaded the popular mind in a number of classical symbols such as the wastrel of the realistic novel-writer, the degenerate who, with a cigarette-stub depending from his lower lip, "supports" a bar and swallows drink after drink until closing time; the campaigner with his pipe and pot, the sailor with his twist and tot, and Dutch paintings of tavern interiors with village worthies smoking long clay pipes and drinking beer out of highly decorated steins. Clinicians have been unable to free themselves from this obsession and have fallen into the error of allotting equal rôles to both drugs, or they may possibly (but this is a point which Dr. Bussy does not make) inherit a tendency to suspect tobacco from their ancestors of 200 years ago, who were used to drink but to whom smoking was a vicious innovation. He holds English text-books almost entirely responsible for the perpetuation of this fiction, and recounts the quaint experience which first led him to suspect it in 1918. An army captain, whose ailment an English specialist had diagnosed as tobacco amblyopia, and whom he discharged after 21 days' treatment, left 22 large empty Benedictine bottles in his room, and this evidence suggested to Dr. Bussy that "alcohol" should be substituted for "tobacco" not only on the officer's clinical record but also in the standard works. It is certainly significant that there is no more amblyopia among workers in tobacco factories than there is in any other industry. Apart from his rejection of tobacco from the ætiology, however, the author also plays havoc with accepted ideas on the pathology of the lesion. If it were simply due to an inflammation of the interstitial tissue, neuroglia and

septa of the optic nerve, leading to strangulation and atrophy of the nerve-fibres, there is no sound reason why it should select the macula for its manifestations rather than any other part. Again, no damage to the vascular system of the optic nerve could explain it, for the connexion between these vessels and the macula is not at all an intimate one. If, however, we admit with Nuel that the primary lesion is in the ganglion cells of the macula and paramacula—that is to say, in the retina at the point of focus—the disease takes its place logically with scintillating scotomata and central amblyopias due to male fern or quinine. Its apparent selectivity is due to the fact that the toxin renders the cells of the ganglia capable of being decomposed by light, and the centre, where most of the light is concentrated, is the first to go blind. Many patients only complain of visual impairment after an exposure to strong light, such as the glare of a road or a snow-slope on a blazing summer day. A photographer will blame his flashlight and an electrician his bulbs. This would explain the restriction of the damage to the central spot. The author suggests that he has shown sufficient reason why the nebulous term retrobulbar neuritis should be replaced by "alcoholic macular retinitis." His paper throws down a challenge of some importance to his fellow ophthalmologists.

A LAYMAN'S INDICTMENT OF DICHOTOMY.

THE system of secret fee-splitting between physician and surgeon was never likely to be approved by the lay public. Outspoken criticisms of it appear in an article entitled A Layman's Fears, published in a recent number of the *Madras Medical College Magazine*. The author, Mr. Govinda Krishna Chettur, principal of the Government College at Mangalore, has some flattering things to say of the medical profession, but he cannot conceal certain uncomfortable misgivings and his criticisms of dichotomy are only one part of a larger indictment. He is not concerned, he explains, over "those amiable gentlemen who—for a consideration—have not the heart to deny the necessitous individual a certificate of health or disease, as the case may be," but he feels that both physicians and surgeons are allowed a dangerous freedom from control. Someone falls ill, says Mr. Chettur, appendicitis or some similar trouble is diagnosed, and an operation is spoken of as essential. The operation takes place with one of three results—the patient recovers completely, or is enfeebled for life, or dies. In the first of these three contingencies everyone is satisfied; in the second and third there has been a mishap for which the surgeon admits no responsibility, and there is no competent authority which can call him to account. The patient's friends cannot question what has happened; it is assumed that the surgeon did his best; both he and the patient have been unfortunate—that is all—and there the matter ends. But these are not the worst of A Layman's Fears. What if physician and surgeon are dishonest? The doctor may advise an operation which he knows to be unnecessary and may recommend the name of a particular surgeon to perform it, not because he is the best man, but because there is a secret arrangement between the pair to split their fees. How, asks Mr. Chettur, are these malpractices to be stopped? How are surgeons to be brought under control so that they shall be required to give an account of their work to the satisfaction of a body competent to judge? Undeterred by a problem almost as difficult as if the Bar Council and the Law Society were authorised and expected to exact a personal explanation from every lawyer whose client failed to secure judgment for the full amount claimed, Mr. Chettur proposes his remedies. India should have her own college of surgeons and her own standardised hospitals and should thereby set up an efficient control of the operating surgeon; operations must be performed nowhere else but in the hospitals, and everyone who becomes a Fellow of the Indian College must first solemnly and expressly repudiate and abjure the splitting of fees in any form whatsoever.

We may hope that the author of A Layman's Fears is unnecessarily apprehensive. He cites no first-hand evidence of the evils he describes. His illustrations are derived from a popular article in a non-technical periodical published in America two years ago. His attack in the *Madras Medical College Magazine* is followed by a reassuring editorial note. Members of the medical profession, observes the editor, appreciate criticism and are anxious to profit by it; they are but human beings liable to commit errors; they do not pretend to possess any supernatural powers of healing, but are taught to practise a humane art on rational lines with ordinary human judgment as their only guide. The editorial note adds, as one would expect, that the medical profession in India condemns fee-splitting as vigorously as in America. The suggestion of the total hospitalisation of medical practice is a dream impossible of realisation in India for many generations to come. In so far as surgeons are indicted, it is answered that there are as yet very few practitioners of surgery in India, not enough to form an Indian College of Surgeons. The time for such an institution will come some day. Meanwhile India must be content with the number of her medical associations, each of which already repudiates the malpractices attacked in Mr. Chettur's frank, if over-anxious, article.

ROYAL LEAMINGTON.

MOST of Leamington was built at a time when tasteful symmetry and open spaces were in fashion. It is a pleasant town, for its wide streets, innumerable trees and painted houses recall the Regency, and it is situated along a typically English river set about with gardens. Celebrated as a centre for hunting, Leamington lies in some of the best country in the Midlands, and the visitor can make excursions to many interesting places near and far afield. These amenities and an admirable train service from London are enough to make the town attractive both to those who want quiet recreation and to their friends. It was not, however, for this reason that the place originally became celebrated, but rather on account of its medicinal springs. In mediæval times the Leamington waters were believed to have healing qualities, and it was around them that the present town grew up towards the end of the eighteenth century. Quickly it became a fashionable spa, and soon after her accession Queen Victoria bestowed on it the title Royal in recognition of treatment she had taken there. Since then the fate of many other English spas has overtaken Leamington. A disbelief in empirical remedies, not least evident amongst spa practitioners, has reduced the number of patients, and the seasonal exodus of rank and fashion has been diverted abroad. It is to be hoped that its fortunes may revive with the increased facilities for treatment inaugurated by Sir Kingsley Wood last Saturday. The special characteristics and indications of English spas have too often been forgotten in their anxiety to reproduce the equipment of foreign competitors, and since this imitation has not always been founded on belief it has not always been successful. But the therapeutic uses of such agents as climate, heat and cold, and a régime daily enforced and regulated by a physician, are undeniable, and there is no reason why the present revival of British spas should not continue. There is, indeed, every reason why the greatest possible use should be made of these centres of recuperation, where the public ought to be re-educated in the principles of health just as tuberculous patients are re-educated at sanatoriums. And where the medicinal waters of any place are suitable for particular ailments the fullest possible use should be made of them. If the spas are to be effective they should not be all of a kind, all offering the same treatment and the same facilities. Their local and therapeutic personality should be preserved. The success of continental spas, moreover, largely depends on the atmosphere of confidence engendered by the doctors who give the treatment, and the doctor who does not believe in what he is recommending cannot possibly inspire this faith.

As a secondary consideration equipment and apparatus are useful, and in so far as the excellent facilities now provided will assist Leamington to become a really valuable spa the town is to be congratulated on its enterprise.

Dr. C. Rasch, professor of dermatology in the University of Copenhagen, will give an address entitled Some Historical and Clinical Remarks on the Effect of Light on the Skin and Skin Diseases at the Royal Society of Medicine on Thursday next at 5 P.M.

THE Harveian oration will be delivered at 4 P.M. on Monday next by Sir John Rose Bradford. Dr. F. G. Crookshank will give the Bradshaw lecture on the Theory of Diagnosis on Nov. 4th, and the FitzPatrick lectures will be delivered by Dr. Arthur Shadwell on Nov. 9th and 11th, the subject being Medicine in Ancient Assyria. The David Lloyd Roberts lecture will be on Racial Degeneration, and will be delivered by Dean Inge on Nov. 19th. All these lectures will take place at 5 P.M. at the Royal College of Physicians of London, Pall Mall East.

Sir James Barr, who retires from professional work and leaves Liverpool at the end of this month, has been associated with that city since 1874, when he came to the Northern Hospital. Three years later he was appointed medical officer at the Old Kirkdale prison, where defective food, ventilation, and lighting gave rise to a high disease and death roll. In characteristic manner he set about putting these matters right, with results which are well known and remembered, for his findings became the basis of the new prison regulations when the prisons were taken over by the Home Office.

Obituary.

GEORGE JAMESON JOHNSTON, M.B., F.R.C.S.I.,

PROFESSOR OF SURGERY, ROYAL COLLEGE OF SURGEONS IN IRELAND.

Prof. Jameson Johnston died very unexpectedly on Oct. 8th at his residence, FitzWilliam-place, Dublin. He had suffered from slight chest trouble for a week or ten days, and was apparently convalescent, when serious symptoms set in, and the end occurred in a few hours. He was about 60 years of age.

George Jameson Johnston was a native of Co. Tyrone, and received his early education at the Royal School, Dungannon. He entered the medical school at Trinity College, Dublin, where he received his medical education, but he took his medical degrees from the Royal University of Ireland. Having been awarded honours in biology more than once, he passed M.A. of that University in 1891, and proceeded to the M.B. degree in 1894. He became a Fellow of the Royal College of Surgeons in Ireland in 1898. He was for many years a demonstrator of anatomy in the School of Physic, Trinity College, and he conducted private classes with great success. Having spent a year as assistant surgeon to the Richmond Hospital, in 1896 he was elected visiting surgeon to the City of Dublin Hospital, to which institution he was senior surgeon at the time of his death. He had been professor of surgery in the schools of surgery of the Royal College of Surgeons for several years past. Although he frequently contributed to the medical journals, it was mainly as a surgical teacher that Johnston had a very high reputation. He was clear, practical, incisive, gifted with humour and power of repartee, and his classes both in the school and in the hospital were always crowded. Personally he was held in great affection both by his pupils and by his professional brethren. His brusque and direct manner —characteristic of the northern type—failed to hide the real kindliness, friendship, and honesty that lay beneath. Sorrow for his unexpected death will carry with it deep sympathy with his young wife, to whom he had been married for little more than a year.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXCIII.

THE TREATMENT OF SENILE INSANITY.

I.—PRESENILE MENTAL DISORDERS.*

IN this article the term presenile is applied to mental disorders arising in the period of life beginning in the late 'forties and extending to the early 'sixties. This period includes the climacterium in women, and certain common mental disorders met with in both sexes during the years which precede the actual period of old age or senility.

The more frequent clinical types of mental disorders that are encountered during the presenium are as follows: (*a*) anxiety attacks; (*b*) involutional melancholia or, more rarely, excitement; (*c*) arteriopathic insanity; (*d*) Alzheimer's dementia.

Anxiety States.

Most of these patients have struggled with psychological difficulties throughout life, with more or less successful adaptations which arrival at the presenile period of life will often upset. A frequent result is an attack of anxiety, popularly referred to as "nerves."[2] Some patients begin to fear that their work is inaccurate, become irritable, and unable to make decisions. Others will go from doctor to doctor, dogged by the fear of cancer, or some other disease from which a parent may have died. Such examples seldom become certifiably insane, and treatment will do much for them, though great patience is necessary. A complete physical examination is desirable in order to reassure the anxious patient. Teeth may require attention, and visual errors should be corrected with suitable glasses; the importance of sleep and of proper bowel actions should not be forgotten. A watch should be kept on the weight, and any indiscretions in diet or hours readjusted. A weekly interview of 20 minutes or half an hour will work wonders in allaying the anxiety, if the practitioner can listen with sympathy to the extravagant and fantastic terrors which such patients long to tell to someone who will not laugh at them. Psychoanalysis should not be advised at this comparatively late age. Stern insistence by the physician on some daily ritual, such as deep breathing, a cold sponge, or an hour's walk will be found of material help. Endocrine therapy is a useful adjunct in many cases, and a pluriglandular tablet, two or three times a day, may be prescribed. Lastly, some attempt should be made to find the patient a new interest in life. Golf, a week-end cottage, fishing, gardening, an allotment, photography, wireless, the keeping of pet animals or chickens—some new outlet can be found to suit every taste and purse. In the search for hobbies any form of motoring should be avoided.

Involutional Melancholia.

Depression is by far the most common mental disturbance of the presenium. The onset occurs usually during the 'fifties in men, and earlier in women. In most cases the depression appears for the first time, there being no previous history. Sleep is seriously delayed, and insomnia may become absolute. The irritability and seclusiveness of the patient are the despair of his family. Alarming delusional ideas become prominent. The successful man begins to insist that he has no money. Others blame themselves for all sorts of offences against nature and society, or assert that their bodily organs are dead or diseased. Some cases develop ideas of persecution and espionage, or declare that poison is being inserted into their

* An article by Dr. James on the Treatment of Senile Mental Conditions will appear next week.

food. Despair, remorse, self-pity, self-reproach, are common emotional reactions in the depressive condition, states which are accompanied by the manifestations of fear or anxiety, and lack the characteristic inertia of manic-depressive melancholia. The diagnosis must rest on an accurate history and a careful physical examination. A late paresis must always be excluded. Paralysis agitans not infrequently begets a querulous hypochondriasis.

Poor persons can hardly ever be successfully nursed through such an illness at home. When such patients are obviously insane from the legal point of view, they are best sent to the observation ward of the local Poor-law institution, whence they will be transferred to a public mental hospital. Patients with ideas of financial ruin and past sin are almost always potential suicides, and it cannot be too strongly impressed on practitioners that they should warn the family without delay of the risk that exists. Where there is a fear of active suicidal impulse, or pronounced abstinence from food, the practitioner should not hesitate to advise admission into a mental hospital. Where means and good surroundings are available, and the depression is not deep enough to influence conduct unduly, treatment at home, or in a nursing home, may prove successful, though for many reasons these patients undoubtedly do better away from home. Two nurses will be necessary, and male nurses have definite advantages for male patients in this type of illness. The essential part of treatment at first is rest, preferably in bed. All work must be forbidden. A warm bath should be given night and morning; the diet should be liberal though light, and meat allowed only once a day. It will be found that persuasion will have to be exercised to induce the patient to take food regularly. It may safely be assumed that the patient is constipated. Moreover, there seems to be an obstinate stasis of the large intestine, and a tendency for fæcal material to accumulate. A high, copious enema should therefore be given daily for a few days. The bowels will then have to be kept active; one or more vegetable laxative pills at night, which should contain strychnine and aloin, followed by a saline draught or an effervescing preparation in the morning, will suffice. Paraffin and similar lubricants are rarely successful. Sleep must be secured with a sedative. Light cases may respond to a bromide mixture; 5 gr. each of the three common bromide salts, a little Fowler's solution, and ℥xxx. of tr. hyoscyami makes a useful evening draught. As a rule, more definite hypnotic treatment is necessary, and medinal, gr. x., amylene hydrate ½ to 1 drachm in water, or the offensive but safe and excellent paraldehyde from 1 to 3 or 4 drachms, may all be tried until suitable results are obtained. Chloral hydrate and sulphonal should be avoided. Many patients of this class are cold at night, and hot bottles and ample warm bed clothing must be available, even during the summer months. The weight should be charted weekly, and every effort made to secure a steady gain. Some cases will be agitated, restless, and difficult to control. Half- to one-drachm doses of liquor morphinæ bimeconatis, three times a day, will help to diminish the restlessness; ℥ x. to ℥ xxx. of tr. opii may also be tried, but the constipating effect of this preparation should be remembered. After three or four weeks' rest, massage in bed may be given daily. If improvement is maintained, the patient may be allowed up for an hour or two in the evening. Gentle walking exercise comes next. A return of unfavourable symptoms, such as loss of weight or insomnia, should be dealt with by a return to bed. After a suitable convalescence and change to seaside or country, the patient, if keeping up his weight, should be encouraged to return to work. It is important to make a complete physical overhaul, including chemical and bacteriological examinations of the urine, X rays of teeth and sinuses, blood chemistry, fæcal investigations, &c., with a view to discovering some possible source of chronic infection. If found, it should be corrected. Dental extractions should be done gradually. If operative measures are necessary care must be taken to ensure that the patient does not receive too much warning, since he anticipates such performances with intense suffering.

Involutional Excitement.

Isolated cases of excitement occurring for the first time in the presenium are uncommon, but do occur. Extravagance in dress and living menace the family fortunes, and unfortunate love affairs with young women or young men are frequent events. If the patient is certifiable, legal care should always be recommended. If not certifiable, the patient will maintain that he or she has never been better in his or her life, and that doctors are a pack of old women. Under these circumstances a discussion of treatment by the practitioner is rendered superfluous.

Arteriopathic Insanity.

This results from sclerosis of the cerebral arteries, with or without high systolic and diastolic blood pressures. A cerebral hæmorrhage may be the first evidence of the condition. On the other hand, fleeting symptoms, such as a temporary loss of power, aphasia, or momentary confusion may last for years. Arteriosclerotic patients become very unstable emotionally, weep or laugh immoderately on the slightest pretext, and sometimes become intensely suspicious. In cases associated with high pressures, episodes of confusion and vertigo may be accompanied by attacks of vomiting. The diagnosis must rest on the physical signs, and here assistance may be gained from an ophthalmoscopic examination of the condition of the retinal arteries, which provide a guide to the state of the cerebral arteries.

Constant wandering from home, and violence towards other members of the family, are conditions which require immediate certification. Delirium following a "stroke" and dirty habits will also generally mean admission to an institution; but energetic treatment at home produces excellent results. The sufferer must be put to bed and kept there, and given morphia if necessary. The best purge is 5 or 6 gr. of calomel, followed by copious saline draughts. For several days the patient should be starved as far as is practicable. A little milk pudding, or dry biscuits, milk and eggs, is all that should be allowed for a fortnight or more. Alcohol and tobacco are forbidden. As improvement takes place, and when the blood pressure falls, the patient may be got up. His future life must be carefully regulated. Work is reduced to a minimum, and rest in bed at the week-ends insisted upon. A mercurial purge should be given once a week, and nitrites may be useful if pressures become high. Iodides seem to assist some patients. The heaviest meal must be taken at midday, and is the only one which should contain meat. A great deal can be done for the arteriopathic patient if he is treated early, and before a gross focal lesion has taken place.

Alzheimer's Dementia.

This condition is rare, and is mentioned because cases do occur in the presenium, their progress being rapid, and termination fatal. It occurs as early as the third decade of life, and is characterised by a sudden progressive mental deterioration, with profound amnesia, hallucinations, a stammering repetitive speech, and convulsions. Nothing can be done save to arrange adequate nursing care, and these patients almost invariably find their way into a mental hospital.

G. W. B. JAMES, *M.C.*, M.D., D.P.M. Lond.,
Resident Physician, Moorcroft House.

A NEW SURGICAL APPOINTMENT.—The Board of Management of the Manchester Royal Infirmary has decided to create a new honorary post in the surgical staff by the appointment of an honorary surgeon to specialise in diseases of the brain and spinal cord requiring surgical treatment. The new honorary surgeon will give his attention entirely to this kind of work.

Special Articles.

VITAL STATISTICS OF 1924–25.

THE REGISTRAR-GENERAL'S STATISTICAL REVIEW.[1]

THE tabular statement of deaths in England and Wales during 1925 is now published, a fact which we believe implies considerable speeding up as compared with experience in recent years. Late in July the portion of the Annual Statistical Review for 1924, described as "Text," was published; and the extremely valuable summary of comparative experience in regard to deaths and causes of death for which all persons interested in our vital statistics look eagerly is also at last made available for 1924. Although the tables for 1925 will doubtless be useful to many statistical workers, especially to public health officials, we must wait presumably another six or nine months for the Registrar-General's own comments on the year 1925. Meanwhile it may be noted that the national death-rate continues low; that, as compared with all pre-war years, the death-rate at each successive age-period right up to 85 is lower than in the past; the rate of infant mortality per 1000 births was only 66 for female and 84 for male infants. Enteric fever only caused 766 deaths in England and Wales. This gives a death-rate of 19 per 1,000,000 of population, as compared with 35 so recently as 1915. The death-rate from tuberculosis was 54 times as great as that from enteric fever, illustrating the greater difficulty in controlling respiratory than alimentary infections. And yet the death-rate from tuberculosis was lower than that in 1885, in the ratio of 100 to 42.

Child Mortality and Birth-rate.

Turning to the "Text" for the year 1924, it is important to note that infant mortality at ages under 4 weeks has declined since 1911 from 40 per 1000 births to 33 in 1924, a decrease of 17·5 per cent. This decrease, although small as compared with the decrease of 53·3 per cent. at ages 1–12 months, is nevertheless significant; and it is important in view of the frequent statement, erroneously made, that this early infant mortality has not declined and probably is irreducible. The whole of the section of the "Text" dealing with infant mortality is well worthy of study by medical officers of health and medical officers of child-welfare centres. Attention should be drawn to the paragraph on p. 23 dealing with death-rates at ages 1–5. At this period of life susceptibility of mortality to environment may be regarded as at its maximum, and if, as the "Text" thinks likely, the lower birth-rate has helped in making some improvement in this direction, progress cannot be expected to continue for long at the present rate, "for the birth-rate, though it may continue to fall, cannot long do so at the present rate consistently with national survival."

Acute Infectious Diseases.

The striking decline in deaths from typhoid fever continues; it is significant that the death-rate from this disease, while nearly equal in town and country, is at its maximum in the smaller towns. The death-rate from measles, though subject to epidemic variations, is declining. Of the many points suggesting further inquiry we note the greater mortality from measles of males at ages under 2, and of females at higher ages. London has far and away the highest death-rate from measles, its figures, 285 per 1,000,000, contrasting with 120 for all areas. Why should this be? Diphtheria, although now as preventable as small-pox or typhoid fever, was the registered cause of 2501 deaths in 1924 and 2774 in 1925. These numbers deserve to be particularly watched, for their magnitude will be a measure in the next few years of official medical, non-official medical, and parental care and intelligence, which could hardly be surpassed in delicacy and exactitude. The abolition of diphtheria does not necessarily involve the artificial immunisation of the majority of the child population, however desirable this is; it may be approximated by prompt medical attendance and equally prompt administration of diphtheria antitoxin, without waiting for the results of throat swabs. Encephalitis lethargica was the ascribed cause of 1407 deaths in 1924 and 1372 in 1925, the highest death-rate in the 1924 returns occurring at ages 0–5 and 55–65. The mortality from this mysterious disease was heaviest in the north of England, and there, as elsewhere, it was highest in urban districts.

Tuberculosis and Syphilis.

The sections of the "Text" dealing with tuberculosis and with syphilis especially deserve study. For six years in succession the mortality from tuberculosis has been lower than in any preceding year. It has declined by 8 per cent. in four years. There are some valuable remarks as to the effect of war conditions in altering the maximum age incidence of the tuberculosis death-rate. For males the highest rate in 1924 was at ages 45–55 and for females at ages 20–25. At the last-named age the death-rate of females was practically identical with that of males. Whether this is a direct effect of war events, or represents a change in the industrial conditions of women, can scarcely be decided until a few more years' records are available. On p. 51 is an interesting diagram giving the annual death-rate from syphilis in each year 1901–24, based on the aggregate deaths returned as due to syphilis, to general paralysis of the insane, and to aneurysm. For the seven nearest years in succession each annual death-rate is lower than its predecessor, and the extent of the decline is remarkable. This decline and its possible social and medical causes are deserving of special note.

Cancer.

The studies in this review on cancer are most important, following as they do on a series of similar studies in preceding reports. The registered cancer mortality still increases, that from carcinoma much more rapidly than that from sarcoma. The death-rate is in part a function of age, being higher at ages 45–55 than at ages 35–45 by 216 per cent., at ages 55–65 by 145 per cent., at ages 65–75 by 83 per cent., and at ages 75 and upwards by 32 per cent. than the death-rate of the immediate preceding age-period. Except at the age-period 45–55 the cancer death-rate is higher in males at all the significant ages. The present tendency is for the excess of male over female mortality to increase. Comparing standardised rates for the two sexes, that for males, when compared with the four years preceding the war, in 1924 had increased from 90 to 100, while that for females had moved only from 97 to 98. This more rapid increase for males is largely due to the decreasing share of the sex organs in the female death-rate; and the fact that the death-rate from uterine cancer and the death-rate from mammary cancer are moving in opposite directions suggests several lines of pathological and social investigation.

Other Causes of Death.

Rickets and diabetes form the subject of interesting paragraphs, as does also alcoholism. There is a careful analysis of deaths from heart disease, which shows how important it is not to think of this registered cause of deaths as a single entity of simple causation. The sections on bronchitis and pneumonia are important. There is evidence of a general tendency to substitute broncho-pneumonia for bronchitis at ages under 5; but inasmuch as the combined death-rate under the two headings has not increased, there is a satisfactory reduction of respiratory infection in early life. Gastric ulcer has now become preponderantly a fatal disease in males, and its statistics furnish interesting problems for clinicians as well as

[1] (*a*) The Registrar-General's Statistical Review, 1925. Part I.: Medical. H.M. Stationery Office. 15*s*. (*b*) Ditto for the year 1924. Text. 5*s*.

for statisticians. A similar remark applies to the now stationary death-rate from appendicitis. The puerperal mortality-rate has remained stationary during the last 14 years, suggesting reflections of a not very happy character. The section on deaths from anæsthetics should be pondered by everyone who has to administer them, and that dealing at length with accidents due to motor vehicles demands the attention of the whole community.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Royal Infirmary: The New Radiological Department.

ON Saturday last the Duke of York opened the new radiological department of the Royal Infirmary, Edinburgh. Besides being a splendid addition to the technical equipment of a great hospital, the department is a symbol of the new policy animating Scottish medicine. Many years ago an English member of the Royal Commission on Poor-laws was conducted over the Royal Infirmary by the medical superintendent of that day. As he came away, much impressed with what he had seen, he turned to an officer of the public health service and remarked: "But surely you would not municipalise this?" He had the curious idea that the only thing that could be done to extend the resources of a great national institution was to municipalise it. It had to be explained to him that the Royal Infirmary of Edinburgh drew its life-blood from all Scotland; that it was an essential part of two medical schools; that it was a great training school for physicians and surgeons, a much desired training school for nurses; and that it performed the full functions of a general national hospital for Scotland, for a great part of the south-eastern province and for the city of Edinburgh itself, drawing its students from all over the Empire and from abroad. One does not municipalise institutions that have grown up on this national scale; that is far too small an idea to apply. The Royal Infirmary, of course, has points of contact with the public services; but it is itself a living institution whose life seems to grow more intense with the years.

The new department is equipped on a scale hitherto unknown to Scottish institutions. The building is about 160 feet in length, with an average width of 60 feet, and has a basement, two floors, and a flat roof; it is designed to carry another floor if found necessary at a later date. The basement contains the generating electrical plant, mechanics' workshop, and general storage rooms. On the ground floor are the screening and treatment rooms, a lecture hall, and the various private rooms and offices. The first floor has accommodation for electrical and massage treatment, remedial exercise, a radium department, and rooms for treatment by artificial sunlight. The usual method of affording protection to members of the staff against constant exposure to the X rays is to cover the walls and doors with heavy sheet lead. The cost of this would have been prohibitive, and it was decided that the protection must be incorporated in the building material used to erect the walls. Experimental partition slabs were made and tested, the slab selected being composed of one part rough sand, two parts engine ashes, one part Portland cement, and three parts barium. As a further protection, the walls, ceilings, and floors are plastered on each side with a ⅝-inch coat of barium plaster.

The department has been erected at a cost of about £52,000. The director is Dr. Woodburn Morison, and his assistants Dr. John O'Sullivan and Dr. W. Crichton Fothergill, and it is satisfactory that the disabilities under which they have been working are now removed and that Edinburgh has the benefit of one of the best equipped radiological departments in the world.

Poor Relief and the Coal Strike.

Within the last few months there has been evidence of discontent among the parish councils, arising from the duty required of them to give relief to the wives and children of miners on strike. As this is the time for preparing the annual budgets of the parishes the occasion is taken to dispute the legality of the relief given, and a little time ago the Parish Councils' Association arranged a discussion on the whole problem. By Scottish law it is not legal to give relief either to able-bodied or the dependants of able-bodied except in terms of the Act of 1921, where the applicant is unable to find work. This, of course, does not apply to a striker; yet the parishes are asked to relieve, and do relieve, the dependants of strikers. Scottish Poor-law authorities are nothing if not argumentative, and, as the new burdens on the rates are serious, it was inevitable that someone should raise the legal question in the courts. A case is now pending and a decision is expected when the courts assemble this month. It has, however, been publicly announced that, in the event of the decision being unfavourable to the tenor of the circulars issued by the Scottish Board of Health, the Government will take the necessary measures to regularise the position.

Dr. Claude Ker.

A tablet has recently been unveiled in memory of Dr. Claude Ker, late medical superintendent of the Edinburgh City Hospital at Colinton. To every British student of fevers, Dr. Ker's masterly work was well known, and when, under stress of duty, he died before his time, this field of medicine lost an authority. Claude Ker had many friends and no enemies. He had a rare charm of personality. It is a gratification to everyone that knew him, lay and medical, to see this tribute to his memory. It was an inspiration to watch the informed enthusiasm with which he studied each new departure, recording with his own pen, so as to eliminate the personal equation, two or three lines of treatment of this disease or that, in order that he might learn directly the values of one treatment against another. There was nothing in the modern study of fevers that he could not handle with the light touch of a master.

Rickets in Scotland.

At the opening of the Springburn Child Welfare Centre in Glasgow last week, Major Walter Elliot, Under-Secretary of State for Scotland, announced that it had been arranged that a committee consisting of expert nutritionists, clinicians, and administrators should make further concerted inquiry into the problems of rickets in Scotland.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A Small-pox Epidemic.

PARIS is now in the throes of a fresh epidemic of small-pox. The first cases appeared almost simultaneously towards the end of the second week in September in six arrondissements and three communes on the outskirts of the city. The multiplicity of infective foci caused some anxiety; for although it is relatively easy for the public health authorities to check the spread of small-pox breaking out at a single point, it is another matter to be sure of dealing with all sources of infection when these are numerous. The multiple origin is a sign that the small-pox germs escaped the measures taken for disinfection, or that some of those who caught the infection had it so slightly that they were never recognised and isolated. This makes it clear how important is the coöperation of all practitioners who may have a chance of detecting carriers and securing their segregation. Dr. Camus, director of the vaccination service of the Académie de Médecine, has pointed out that for three months there has been a small centre of infection not far from Paris. This centre, which has perhaps had something to do with the Parisian epidemic itself, has been the starting-point of a long chain of infections which could easily have been broken if medical men had been warned of the presence of small-pox in their area.

Hexamine in Typhoid Fever.

The use of hexamine (urotropine) in typhoid fever has long been recommended. Dr. Chalier and Dr. Grandmaison, of Lyons, have been giving it intravenously as a routine method of combating the development of typhoid bacilli in the blood, and report that when it is given early this treatment prevents complications and relapses. The drug is eliminated in bile and urine and is especially useful in protecting the patient against biliary complications such as hepatitis, acute or subacute angiocholitis, cholecystitis, and post-typhoidal gall-stones. It is also used, of course, for disinfecting carriers. In the 160 cases on which Dr. Chalier and Dr. Grandmaison report, the general symptoms were distinctly improved and diarrhœa, in particular, seemed less common than usual. There were no intestinal hæmorrhages whatever.

Arsenical Drugs in Amœbiasis.

It is generally considered in France that arsenobenzenes given by the mouth form the best treatment of amœbiasis and that they are equally useful in other intestinal parasitic infections of the same kind Dr. Ravaut uses compressed tablets of novarsenobenzol in doses of 10 cg., recommending that they should be broken up into small portions before swallowing, so that the active principle may be liberated in the digestive tract. Arsenobenzol by the mouth has not the same disadvantages as when it is given by injection. It is well tolerated and can be used without danger in doses of 0·2–1·0 g. during 24 hours. Its effect is remarkable and the cysts of the amœbæ sometimes disappear in a couple of days. In acute and subacute cases treatment by injection is indicated, but in the chronic forms oral or rectal administration is preferable as it is the only one which secures removal of the cysts.

Accidents of Spinal Anæsthesia.

After spinal anæsthesia shock may show itself in various ways, particularly in vasculo-nervous troubles and in functional disorders of the viscera and organic structures connected with the vegetative nervous system. Dr. Daniel, of Bucharest, has lately reported to the Académie de Médecine that in order to avoid such sequelæ he has been using intravenous injections of cerebro-spinal fluid. Assuming that accidents following spinal anæsthesia are anaphylactic in origin and are determined by disturbances of the vago-sympathetic he considers that the preliminary injection of cerebro-spinal fluid introduced in small quantity into the blood stream produces a slight shock which causes temporary desensitisation and has the effect of protecting the body against the sudden shock caused by penetration of the anæsthetic.

Treatment of Tuberculous Epididymitis.

Dr. Jean Tissot and Dr. Chaignon recommend the use of benzyl-cinnamic ether for tuberculous epididymo-orchitis. The drug is well tolerated. Pain disappears after three or four injections, and tuberculous nodules are absorbed without breaking down, whilst necrotic tissue disappears with rapid cicatrisation. One of their patients, thanks to this treatment, was spared orchidectomy, his weight has increased by 7 kilos, and for the past year he has had no recurrence. The drug is in an oily suspension and it is injected into the muscles of the buttock like bismuth or sulpharsenol.

First-aid Service in France.

Sponsored by Dr. Armand Vincent, a proposal is being considered to organise a first-aid and emergency medical service which will make use of aeroplanes, automobiles, and wireless telegraphy. This service would be adapted for rural requirements and would be elastic enough to meet any special local needs. Its advocates recommend a semi-official organisation.

Dr. Henri Claude, professor of psychiatry at the University of Paris, is leaving for Beyrout, on a mission connected with the systems of medical examinations there employed.

A course of curietherapy and deep radiotherapy is to be given by Proust and his colleagues at the Tenon Hospital from Nov. 15th to Dec. 16th. There will be 28 lectures and also practical laboratory work on the technique of curietherapy and deep radiotherapy, the measurement of rays and emanations, and histology. Those wishing to attend the practical course should write to the Laboratoire de Curiethérapie, Salle Duflocq, Hôpital Tenon, Paris.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Epidemic of Typhoid in Hanover.

THE epidemic of gastro-intestinal catarrh mentioned in my last letter has, unfortunately, revealed itself as an epidemic of typhoid fever more widespread than any which has occurred in this country for many years. Up to the present time more than 2000 cases have been notified and there have already been 186 deaths, although many of the patients have not yet reached the third week of the disease, when the mortality is usually maximal. Recently there has been a definite decrease of new cases, and the epidemic seems to be past its height, but the source of the infection has not yet been definitely ascertained. It was believed that the Rickling waterworks were responsible for the infection, but the chief of the Government Medical Department states that typhoid bacilli cannot be found in the water there. The Government has sent Prof. Jürgens, of Berlin, to Hanover, and he is of the opinion that the epidemic is due to other causes although his investigations are not yet complete. The public in Berlin was somewhat alarmed by the rumour that in Berlin also an epidemic of typhoid had broken out, but the authorities informed the press that the number of typhoid patients during the past six months was not more than 61—that is to say, not above the average. The authorities of Hanover have been much blamed because they were too optimistic in the beginning of the epidemic and because at a time when the alleged gastro-intestinal catarrh was recognised as typhoid they declared that the epidemic was at its end and that boiling the water was no longer necessary. Much comment is also made on the fact that no medical man is a member of the city council.

The Düsseldorf Exhibition.

The Exhibition of Hygiene (commonly called *Gesolei*) at Düsseldorf this autumn and winter is one of the largest of its kind ever held. There was a similar but international one at Dresden in 1911, but it was limited to hygiene, whilst the present exhibition, which is purely German and Austrian, includes social aid and physical culture in addition. The present exhibition is of enormous dimensions. The grounds are in a beautiful situation on the banks of the Rhine which is here rather shallow but nevertheless imposing in its width. Prof. Schlossmann, of Düsseldorf, the well-known specialist in children's diseases, is the principal originator of the exhibition, the main object of which is to make hygiene interesting to the lay visitor by means of pictures, diagrams, and exhibits. The healthy body is shown by transparencies in such a way that the visitor, by special apparatus, may see the circulation of the blood and study the function of the intestines and bladder. These objects have excited the greatest interest among the numerous visitors, as also have the models of prehistoric man shown together with excavated skulls and bones and reconstructed pile dwellings and other prehistoric habitations. Amongst many other things the exhibition illustrates the treatment of diseases and care of the sick; the work of the medical man in town and country; his training and social position, the organisation of hospitals and clinics, especially those of the Düsseldorf Academy of Medicine, which is to be enlarged into a university; the work of bacteriological and pathological laboratories and first-aid

and the transport of casualties. The German spas and health resorts have a pavilion of their own where the indications of the individual spas, the development of their institutions, the number of visitors, and pictures of their surroundings are displayed. Unqualified practice and quackery are the subject of a special exhibit showing advertisements of quacks, the expensiveness of their prescriptions, and other nuisances caused by them. Other departments are concerned with climate, food, housing, clothes, ventilation, lighting, infectious diseases and the mode of their spread, industrial hygiene, and the health of women. In the department dealing with food not only the physiology and chemistry of nutrition, and of table luxuries, tobacco, and spirits, but also the production of animal and vegetable food is shown. There is a model farm within the precincts of the exhibition where milk is shown on its course from the udder of the cow to the mouth of the consumer. Pisciculture and bee-keeping are added to the farm. In the veterinary department there are exhibits showing the conveyance of diseases from animals to men.

That part of the exhibition which is devoted to the public health work of cities is, perhaps, more valuable to the medical officer of health than to the ordinary practitioner. There is an interesting display of clothing which shows its development from ancient times until the present day, and concludes with examples of healthy and unhealthy clothes. In the department of industrial hygiene the visitor learns about insurance against illness, accidents, and factory diseases; in a great hall devoted to the hygiene of traffic specimens of hygienic railway-cars, sleeping-cars, and the like are to be seen. By no means least interesting is an exhibit showing the effect of the blockade on the general health during the war, together with a display of food substitutes then used. In the department of public health are exhibits illustrating the care of children from infancy to the time of leaving school, the combat against tuberculosis and alcoholism, the care of cripples and deaf-mutes, and the treatment of psychopathic people. Lastly, the department of physical culture gives a good impression of the development and the present state of physical exercises in Germany. The different sports are shown and there is a stadium in the grounds of the exhibition where numerous athletic events have taken place.

The exhibition, which will be closed at the end of October, is proving a great success. Many congresses have been held in connexion with it. Between Sept. 15th and 25th, for instance, there have been congresses of the German Pediatric Society, the Pharmacological Society, and the Association of Licensed Druggists, not to mention the Congress of German Naturalists and Medical Men, which was attended by about 5000 members.

New Remedy for Tuberculosis.

Foreign newspapers have published a number of rumours about the successes obtained by Prof. Erich Leschke, of Berlin, in the treatment of tuberculosis with a new gold compound called triphal. Prof. Leschke, who has not yet published his results, kindly authorises me to inform readers of THE LANCET that he has been using triphal for more than a year and that he gives injections of 0·25 g. at intervals of four days. The exudative and nodular forms of tuberculosis, he finds, are equally suitable for the treatment, and he also administers the compound before performing a pneumothorax in cases of tuberculosis of both lungs, where there is a cavity in one lung and nodular lesions in the other. Prof. Leschke states that his results are satisfactory and encouraging, but he desires to point out that it is much too early yet to give information about his work to the lay press. In a few months' time he hopes to publish in the *Zeitschrift für Tuberkulose* an account of his methods and results.

Plasmochin.

You have already commented on the announcement of a new remedy against malaria made at the Düsseldorf Congress by Profs. Sioli and Mühlens. The great merits of plasmochin are that it is cheaper than quinine, tastes better, and gives rise to less unpleasant secondary effects. It is, however, not efficacious as a prophylactic, and when the dose is pressed beyond 0·1 g. cyanosis may occur and serve as a warning against further increase. It seems that children and even infants can take plasmochin without danger.

Death of Prof. Kräpelin.

Prof. Emil Kräpelin, who died at Munich at the age of 71, was one of the most eminent alienists of the present time, and was well known for his application of the methods of experimental psychology to the study of mental pathology. He threw new light on circular insanity, first described schizophreny, and wrote on the influence of drugs on mental diseases, and on hallucinations. His text-book on psychiatry has become a standard work. Prof. Kräpelin not only studied the purely medical side of mental diseases, but also their forensic aspect and especially the reform of the criminal code. He studied the psychology of criminals, advocated a mental hygiene which he believed to be just as important as bodily hygiene, and worked with great energy against the drinking habit. He became professor at Dorpat University in 1886, at Heidelberg in 1890, and at Munich in 1903. He was the founder of the Institute for the Study of Mental Diseases, of which he continued to be the head until some years ago, when according to the German law he had to retire from his chair at the university on reaching his sixty-eighth year.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENT.)

The Cancer Conference.

THE conference which has just concluded at Mohonk, a remote spot in the Shawangunk Mountains about 100 miles north of New York, was attended by the bearers of well-known names in cancer research from most European countries and the American continent. Sir John Bland-Sutton, Dr. J. A. Murray, Dr. A. Leitch, and Mr. Sampson Handley represented Great Britain, Profs. P. Marie, O. Hartmann, and Drs. Regaud and G. Roussy came over from Paris, Drs. F. Blumenthal and R. Bierich from Germany, while Italy sent Prof. R. Bastianelli, Switzerland Dr. Dubois, Belgium Prof. J. Maisin of Louvain, Denmark Dr. J. Fibiger, and Holland Prof. W. M. de Vries (Amsterdam) and Prof. H. T. Deelman (Groningen). Among the 60 or more American delegates may be mentioned the names of Greenough, Bloodgood, Woglom, Fielding Service, F. C. Wood, W. H. Welch, C. H. Mayo, J. B. Murphy, and Maud Slye. Mr. Soper acted as managing director; he it was who chose a secluded spot where deliberations might be undisturbed and on whom fell the duty of issuing an agreed statement to the press. Apart from this it is understood that the French delegates pronounced against the acceptance of a filtrable virus as the cause of cancer, and that Dr. Louis Dublin, of the Metropolitan Life Insurance Company, insisted on the need for a hundred-fold increase in expenditure on cancer research in view of the enormous increase of the disease in the States during the last 15 years.

An Agreed Statement.

Although the present state of knowledge of cancer is not sufficient to permit the formulation of such procedures for the suppression of this malady as have been successfully employed for the suppression of infectious diseases—this is how the statement opens—there is enough well-established fact and sound working opinion concerning the prevention, diagnosis, and treatment of cancer to save many lives, if this information is carried properly into effect. While the causation of cancer is not completely understood, it may be accepted for all practical purposes that cancer is not contagious or infectious. Nor is it

hereditary, although a certain predisposition or susceptibility to cancer is apparently transmissible through inheritance. This does not signify that because one's parent or parents or other members of the family have suffered from cancer, cancer will necessarily appear in other persons of the same or succeeding generation. The control of cancer, so far as this subject can be understood at the present time, depends upon the employment of measures of personal hygiene and certain preventive and curative measures, the success of which presupposes intelligent coöperation on the part of patient and physician. Persons who have cancer, no matter in what form, must apply to competent physicians at a sufficiently early stage of the disease in order to have a fair chance of cure; in some forms early treatment affords the only possibility of cure. Cancer in most parts of the body can be discovered in a very early stage, and if cases are treated properly the prospect for permanent cure (so the statement runs) is good. Since the cure of cancer depends upon the discovery of the growth before it has done irreparable injury to a vital part of the body and before it has spread to other parts, efforts should be made to improve the method of diagnosis in these various locations and the treatment of cancers so discovered. The public, therefore, must be taught the earliest danger signals of cancer which can be recognised by persons without a special knowledge of the subject, and induced to summon competent medical attention, when any of these indications are believed to be present. Over and above this there is much for medical men to do in the detection of early cases and in referring patients to institutions where diagnosis can be made and proper treatment applied. The more efficient the family doctor the more ready is he to share responsibility with the specialist. He can also help by referring cases of cancer which he discovers to local physicians skilled in its treatment. The most reliable forms of treatment, and, in fact, the only measures thus far justified by experience and observation, involve the application of surgery, radium, and X rays. Efforts towards the control of cancer should be made in two principal directions: the promotion of research in order to increase existing knowledge and the practical employment of the information already at hand. Even with our present knowledge, the statement concludes, many lives could be saved which are sacrificed to unnecessary delay.

The Boston Psychopathic Hospital.

The Boston Psychopathic Hospital publishes under one cover the reports of its many coöperating departments. The executive staff are responsible for the general running of the hospital and the coördination of its workers; they are also the medium of communication with the public and have a most important educational function. The number of cases requiring treatment is almost overwhelming, and it is a constant task to keep pace with the daily demands and yet collate and collect material sufficient and suitable to form the basis of research. The director gives a series of unselected cases to illustrate the diversity of the hospital's human problems. A definite advance has been made during the year under review in the vocational guidance of patients. Working through the Y.M.C.A. and the Y.W.C.A., the hospital has reached many who needed help without knowing where to seek it. The hospital has a school district allotted to it and has made a survey of retarded children and has also run a consultation school clinic, where teachers can discuss the problems presented by their pupils. About 1500 patients were admitted during the year. More work has been done on the possible rôle of endocrine disorders in the ætiology of mental disease, and the fasting blood-sugar has been estimated in 200 cases of emotional disturbance. Twenty-four schizophrenic cases have been thoroughly investigated clinically and pathologically, and the resident dentist has made careful study of the cases referred to him. The out-patient department reflects the gradual change in the public attitude to mental hospitals; the cases of frank psychoses are fewer and border-line conditions and psychoneuroses form a steadily increasing proportion. Over 2000 cases were seen during the year. The workers in the biochemical laboratory carry out routine examinations and have also investigated blood-sugar curves and basal metabolism. They have tried to estimate the value of endocrines in obesity and have proved the unreliability of the Kottman reaction as usually performed. The psychological department has prepared a statistical study of the sex life of college graduate men and developed and tested abbreviated scales of intelligence tests. The neuropathological laboratory carries out routine histo-pathological investigations and autopsies. The department of therapeutic research is responsible for the malarial treatment of general paralysis and has discharged a number of cases apparently cured. Tryparsamide has also been used with very satisfactory and lasting results. Relapsing fever has been tried, but has not proved so good, but there is hope that the spirochæte of rat-bite may prove a substitute for malaria. The social service department was crippled by illness amongst its staff, but has completed two surveys as well as the usual routine work. Nearly 1000 cases were dealt with during the year and 7500 visits were paid. Occupational therapy forms another special department, and patients have equipped the wards and roof garden; informal games and exercise have been organised.

LONDON MEDICAL EXHIBITION.

(*Concluded from p. 781.*)

LAST week we gave a brief summary of many of the drugs and pharmaceutical preparations shown at the London Medical Exhibition, which was held from Oct. 4th to 8th. Below will be found notes of other important exhibits in this category and also an account of surgical instruments and appliances, food products, and miscellaneous exhibits.

DRUGS AND PHARMACEUTICAL PREPARATIONS.

BRITISH ALKALOIDS, LTD. (104, Winchester House, London), showed their T.C.P. preparation (trichlorophenylmethyliodosalicylic acid). The drug has been incorporated in ointments and a dentifrice.—PEPSODENT CO. (42, Southwark Bridge-road, S.E.) prominently displayed their well-known dentifrice which is mildly acid and devoid of harmful effects on the enamel of the teeth, and KOLYNOS INCORPORATED (Chenies-street, W.C.), in addition to their dental cream which while cleaning the teeth cleanses the whole of the mouth, showed a useful denture powder for cleaning artificial teeth. This is put up in conveniently shaped flasks with sprinkler top. A purified skin soap was also included in the exhibit.—SANDOZ CHEMICAL CO., LTD. (Pharmaceutical Department, Bradford), among other preparations, exhibited Allisatin Brand tablets, a new and convenient method of administering allium sativum and Felamine Brand Tablets, for use in hepatic congestion, hepatic insufficiency, cholangitis, cholelithiasis, cholecystitis, jaundice, chronic constipation, after operations as a disinfectant and to stimulate digestion and bowel activity. Femergin (ergotamine tartrate, the pure active specific alkaloid of ergot of rye) was also displayed.—JOHN MORGAN RICHARDS AND SONS, LTD. (46–47, Holborn Viaduct, E.C.), made prominent in their exhibit Lactopeptine for digestive disturbances, and Antikamnia, an analgesic and antipyretic, in powder and tablet form.—BENGUÉ AND CO., manufacturing chemists (24, Fitzroy-street, W.), showed a large selection of various drugs and chemical products including Muthanol, a suspension of bismuth hydroxide and mesothorium bromide in sterile olive oil, which is claimed to be of special value in the nervous manifestations of tertiary syphilis.—BURGOYNE, BURBRIDGES AND CO., LTD. (East Ham, London), had for their chief feature a non-poisonous preparation called Zotal Liniment,

said to be an efficacious counter-irritant and stimulant. They also exhibited a physiologically tested concentrate of the fat-soluble vitamins, Neutramyne.—TETMAL, LTD. (45, Farringdon-street, E.C.), exhibited Tetmal, an antipyretic and analgesic which, it is stated, does not depress the heart or circulation, and Codlivex, a confection containing the lipoid of the liver in such proportion that one tablet is equivalent to one tablespoonful of cod-liver oil.—COATES AND COOPER (41, Great Tower-street, E.C.) showed a large number of American and German therapeutical preparations including an improved hydrate of magnesia in convenient tablet form, "Sil-A1," a physiologically pure synthetic kaolin, and the Battle Creek Food Co.'s diabetic foods.

SURGICAL INSTRUMENTS AND APPLIANCES.

MAYER AND PHELPS (Chiron House, 59–61, New Cavendish-street, W.) had an attractive display of surgical instruments and apparatus including the "Leeds" Anæsthetic Outfit, combining apparatus for administering N_2O, O_2, CO_2, open and closed ether and chloroform. Much interest was displayed in the M.P. Clinical Lamp, which, attached to an adjustable stand, has universal movements and, detached from the stand, can be used as a hand lamp, while the Musgrave Woodman Chair for operation work in the upright position received much commendation.—JOHN WEISS AND SON (287, Oxford-street, W.) who showed a wide selection of surgical instruments, drew particular attention to Gaudin's Reverdin Needles, to the Abadie Intestinal Clamps, and to the May pattern of ophthalmoscope. Many of the instruments of this firm were of stainless steel.—GENITO-URINARY MANUFACTURING CO., LTD. (64, Great Portland-street, W.), displayed a very attractive exhibit of the latest instruments for bladder and kidney surgery and instruments for bronchoscopy and œsophagoscopy, diathermy apparatus, catheters, bougies, &c., were shown in great variety.—HOLBORN SURGICAL INSTRUMENT CO., LTD. (26, Thavies Inn, Holborn Circus, E.C.), had a comprehensive exhibit of surgical appliances including Cumberbatch and Robinson's diathermy electrodes, Kielland's midwifery forceps, and electric diagnostic sets. Much interest was shown in the "Minop" knife with detachable blades, an ingenious contrivance by which separate blades can be fixed almost instantaneously to a handle, each blade being hand set.—DOWN BROS. (21–23, St. Thomas's-street) showed a representative collection of surgical instruments and appliances, special attention being called to their improved operation table.—H. PFAU Inhaber L. LIEBERKNECHT (Berlin, N.W. Louisenstrasse, 48) demonstrated surgical instruments for ear, nose and throat work.—SURGICAL MANUFACTURING CO., LTD. (83, 85, Mortimer-street, W.), who are the makers of the well-known "Barton" Sphygmomanometer, drew attention to their "Glasgow" operation table, its universal movements and compact construction making it suitable for large or small institutions, and displayed a wide selection of hospital and consulting-room equipment.—HERBERT E. KENDRICK (342, St. John-street, E.C.), among their interesting display of metabolism and blood chemistry apparatus, drew attention to the British Benedict Portable Metabolism Outfit, a light-weight instrument for completing metabolism tests at the bedside without analysis, and to a clinical colorimeter for estimations of uric acid, urea, creatinine, and sugar in the blood.—DEVILBISS CO., LTD. (West Drayton, Middlesex, and 27, Old Broad-street, W.), had a comprehensive display of medical sprays for the nose and throat and for general disinfectant use.—INHALING DRUG AND APPARATUS CO., LTD. (30, Grosvenor-place, S.W.), showed nebulising and inhaling apparatus by which the flow and density of vapour can be finely adjusted.—G. H. ZEAL, LTD. (75 and 77, St. John-street, E.C.), displayed clinical thermometers of many patterns, including the well-known "Repello" which does not require shaking down, and the "Acello" re-setting case which resets any clinical thermometer instantly.—BRUCE, GREEN AND CO., LTD. (14, 16, 18, Bloomsbury-street, W.C.), showed ophthalmoscopes, optical trial cases, and various types of instruments for ophthalmic work.—HAWKSLEY AND SONS (83, Wigmore-street, W.) had a variety of sphygmomanometers, clinical and recording, the Baumanometer for blood-pressure work, and a large number of recording instruments such as polygraphs and stop-watches, as well as stethoscopes, electric ophthalmoscopes, microscopes and accessory apparatus.—SHORT AND MASON, LTD. (Aneroid Works, Macdonald-road, Walthamstow), exhibited their Tycos micro-barograph which records the most minute change of atmospheric pressure, and portable and surgical types of sphygmomanometers.—A. G. SHELDON AND CO. (59, Weymouth-street, W.) showed sterilised surgical dressings and accouchement outfits in sealed tins which can be obtained at any hour of the day or night, and a variety of belts, binders, rubber sheets and similar articles for use in surgical work.

BRITISH HANOVIA QUARTZ LAMP CO., LTD. (Slough, Bucks), who manufacture quartz lamps to operate both on the direct and alternating current supply, without rectification, exhibited, among other lamps, the Artificial Alpine Sun for ultra-violet radiation, suitable for general practice, the Jesionek Quartz Lamp, suitable for large scale installations in clinics, and the Kromayer Quartz Lamp (water-cooled) for intense local application and for compression or orificial treatment in conjunction with special applicators.—ALLEN AND HANBURYS, LTD. (37, Lombard-street, 7, Vere-street, and 48, Wigmore-street), in addition to the very striking display of hospital equipment shown in the upper hall in conjunction with their pharmaceutical exhibit, demonstrated in the lower hall of the exhibition the Snook X ray apparatus, Philips Metalix tubes, and different kinds of mercury vapour ultra-violet light lamps.—GENERAL RADIOLOGICAL AND SURGICAL APPARATUS CO., LTD. (204/206, Great Portland-street), made a prominent feature of their "Heliol" Arc Lamp for direct or alternating current mains, the enclosed carbon arc emitting radiations resembling natural sunlight at high altitudes, while they also exhibited X ray outfits of various patterns including the "Explorator," an X ray apparatus for private practitioners, suitable for radioscopy, time and rapid radiography, and simple superficial therapy.—BRITISH WOLMUTH SANAWAVES CO., LTD. (25, High Holborn, W.C.), drew attention to their apparatus based upon the principle of the continuous low galvanic current for the treatment of rheumatism, arthritis, gout, neuralgia, and so forth, emphasis being laid on the fact that the enclosed batteries have a long life which makes the apparatus convenient for country work and for use in out-of-the-way places.—I. CALVETTE, LTD. (11, Little St. Andrew-street, Charing Cross, W.C.), showed apparatus for ultra-violet ray work and radiant therapy together with electrical apparatus of various kinds, diathermy apparatus for treatment by light and heat.—STANLEY COX, LTD. (30, Percy-street, W.), demonstrated their sunlight radiant heat lamps and high-frequency apparatus.—MEDICAL SUPPLY ASSOCIATION, LTD. (167/185, Gray's Inn-road, W.C.), exhibited electro-medical and X ray apparatus, hospital furniture, and surgical instruments.—KODAK, LTD. (X Ray Department, Kingsway, W.C.), had an attractive display of film negatives showing the high quality and uniformity of the "Duplitized" films, X ray prints on Kodak "Nikko" bromide paper, and dental X ray negatives on Eastman dental X ray film illustrating the new "Bite-Wing" process for the early detection of interproximal cavities. The exhibit included accessories and materials for clinical photography in great variety.

PEDESTROS, LTD. (26, Langham-street, W.), showed an interesting collection of light metal limbs.—CHAS. A. BLATCHFORD AND SONS, LTD. (90, Clapham-road, S.W.), exhibited among many forms of artificial limbs an ingenious artificial leg which requires no harness of any kind.—T. HOLLAND AND SON (46,

South Audley-street, Grosvenor-square, W.) showed appliances for the treatment of flat-foot and for the treatment of the foot generally, together with a variety of surgical boots.—W. J. WILSON AND CO., LTD. (45, Bedford-row, Holborn, W.C.), displayed light mechanical limbs of ingenious construction and also hospital furniture.

DOMEN BELTS CO., LTD. (456, Strand, W.C.), showed many belts for pregnancy, accouchement, hernia, floating kidney, and gastroptosis.—H. E. CURTIS AND SON (7, Mandeville-place, W.) made an attractive display of their abdominal supports and belts, trusses, and elastic hosiery, including an abdominal support for ptosis, and a colostomy support.

"ARDENTE-ACOUSTIQUE" (95, Wigmore-street, W.) exhibited a large number of aids for the deaf which give a good natural tone with an absence of metallic timbre, each instrument being adapted to the needs of the particular patient. Attention was specially directed to a small earpiece the size of a shilling, which, while effective, is comparatively inconspicuous. This firm had a room fitted up for practical demonstrations. —GENERAL ACOUSTICS, LTD. (Acousticon House, 77, Wigmore-street, W.), showed electrical and non-electrical aids for the deaf in great variety, particular stress being laid on the multiple "Acousticon" by means of which deaf people can hear the preacher in a church or the speaker in a public hall.—W. H. PETTIFOR (11, Victoria-street, Westminster, S.W.) exhibited electrical aids for the deaf of various patterns, attention being called to a test instrument which enables a prescription to be written for an electrical aid to give the most suitable pitch, wave form, and volume of sound for each individual patient. All these firms make a special feature of lending their appliances for home trial.

FOOD PRODUCTS.

OXO, LTD. (Thames House, Queen's-street, E.C.), included in their comprehensive exhibit a new preparation, Oxo Meat Juice. This is prepared from the natural juice of prime fresh, lean beef, concentrated by a special process which preserves the soluble proteids of the juice in their natural uncoagulated condition during the process of manufacture. In addition to the company's Oxoid gland preparations, were to be seen Oxo (cubes and bottles), Hospital Oxo, Beef Essence, Lemco, and Lab-Lemco, the last being a laboratory preparation for the cultivation of bacteria.—BOVRIL, LTD. (148–166, Old-street, E.C.). This preparation of concentrated pure beef was shown in its various forms including Invalid Bovril, Bovril and Cod-liver Oil, and Bovril and Milk.—MEAD'S INFANT DIET MATERIALS (Brookes and Warburton, Lexington-street, W.) showed milks for infants reconstructed so as to resemble human milk, dextrimaltose, a pure Newfoundland cod-liver oil, and other products which are not advertised to the general public, while feeding directions are not printed on the tins. Instructions are given to the medical attendant only.—ENERGEN FOODS CO., LTD. (Energen Works, Willesden), exhibited breads, biscuits, and other cereal products for diabetics.—S. GUTTERMAN AND CO. (35–36, Aldermanbury, E.C.) showed Cereal Meal, a combination of cereal, agar-agar, flax seed meal, and bran, for the relief of constipation.—VIROL, LTD. (Hanger-lane, Ealing, W.), demonstrated the value of Virol, a food which contains marrowfat, glycerine, malt, eggs, lime, and iron. It can be obtained also in the form of a powder mixed with dried milk. Virolax is an emulsion of liquid paraffin and virol.—VITALIA, LTD. (17A, Boniface-street, S.E.), showed a preparation under the name of Vitalia, said to contain 8 per cent. of hæmoglobin and the natural vitamins.—MALTINE MANUFACTURING COMPANY, LTD. (23, Longford-street, N.W.), displayed their Maltine, and maltine combined with cascara sagrada, maltine with hypophosphites, and maltine with creosote.—VITMAR, LTD. (Standen-road, Southfields, S.W.), exhibited Vitmar food adjuvants said to contain vitamins.

GLAXO (56, Osnaburgh-street, N.W.) showed their various milk products including Glax-Ovo, which includes malt extract and a special preparation of vitamin D, Prescription Glaxo for preparing an approximate breast milk, Standard Glaxo which is a full-cream dried milk, Glaxo Malted Food, and Ostelin, a preparation of the essential vitamin of cod-liver oil.—HORLICK'S MALTED MILK CO., LTD. (Slough, Bucks), made a feature of their easily digested and nutritious diet for invalids and convalescents which can also be obtained in the form of food tablets.—Milk and milk foods were also shown by PRIDEAUX'S PURE CASEIN AND LIFE FOOD COMPANY (16, Southwark-street, S.E.), the WEST SURREY CENTRAL DAIRY CO. (Cow and Gate House, Guildford), TRUFOOD, LTD. (Wenbury, Cheshire, and Lever House, Blackfriars, London), and Hooker's Malted Milk by THEW HOOKER and GILBEY (Buckingham).—SISTER LAURA'S INFANT AND INVALID FOOD CO. (Springfield Works, Bishopbriggs, Glasgow) displayed their wares as did also the BRUSSON FOODS, LTD. (311, Gray's Inn-road, W.C.), who showed Brusson breads for diabetes, and COATES AND COOPER (41, Great Tower-street, E.C.) who had a selection of diabetic foods.

MISCELLANEOUS.

Other exhibits were: TINTOMETER, LTD. (Colour Laboratory, Salisbury), who displayed Lovibond's Colour Scale and Tintometer apparatus for colour analysis.—GAS LIGHT AND COKE CO. (Horseferry-road, Westminster, S.W.) who demonstrated the hygienic and labour-saving advantages of gas fires and the advantages of a specially constructed lamp which, while illuminating, ventilates the room in which it is installed; the SCHOLL MANUFACTURING CO., LTD. (Granville-square, W.C.), who showed appliances for flat-foot and other disabilities of the feet; and JAEGER CO., LTD. (95, Milton-street, E.C.), who had an attractive display of pure wool underclothing and sheets, camel-hair blankets, rugs, and footwear, and garments of various kinds for men, women, and children.

LAKEROL BRONCHIAL PASTILLES (124, High-street, Shoreditch, E.) displayed their well-known bronchial pastilles whose ingredients are menthol, eucalyptus, and other essential oils with liquorice, sugar, and gum arabic; and IRVING'S YEAST-VITE, LTD. (12–16, Laystall-street, E.C.), exhibited their product for which is claimed great therapeutic value in glycosuria, septicæmia, pyæmia, and erythemas.—THERMOGENE CO. (Hayward's Heath, Sussex), PINOLEUM COMPANY, New York (Distributing Agents: Brooks and Warburton, 40–42, Lexington-street, W.), J. C. ENO, LTD. (Eno's Fruit Salt Works, Pomeroy-street, S.E.), and GRANOSE FOODS, LTD. (Watford, Herts), were amongst the exhibitors. KEEN, ROBINSON AND CO. (London and Norwich) showed Almata, a complete food for infants and invalids and nursing mothers, and "Patent" Barley and Groats; and CADBURY BROS. (Bournville) showed cocoa and chocolate in various forms.—THE FOOD EDUCATION SOCIETY (24, Tufton-street, Westminster, S.W.) and THE GARDEN CITY PURE FOOD CO., LTD. (95, Westminster Bridge-road, S.E.), were also represented by attractive stalls.

The MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY, LTD. (30, High Holborn, W.C.), which is a mutual society of medical and dental practitioners managed by members of the medical profession for the benefit of the profession, had a useful exhibit explaining various matters of life, sickness, and endowment insurance; and the LANCASHIRE AND GENERAL ASSURANCE CO. (Head Office: 8, Bucklersbury, E.C.) called attention to insurance by medical men as a special feature of their company.

SPAS AND WATERS.

BATH exhibited an attractive display of books and prints illustrating the treatment at this old British watering-place, which for 2000 years has been used for the treatment of disease. Every approved form of balneotherapy is provided by a specially trained staff.—BUXTON showed photographs of bathing

establishments and the chief features of interest in and around Buxton. The radio-active water is saturated with nitrogen and contains also helium and argon. This spa also contains a strong chalybeate spring.—DROITWICH, whose brine baths are being extended, distributed an illustrated booklet giving useful information for visitors to the spa and displayed an interesting selection of photographs. The accommodation includes the Nauheim treatment and aeration baths.—HARROGATE also had an attractive display of photographs and prints and a large number of pamphlets and booklets drawing attention to the advantages of this spa with its diversity of waters.—TORQUAY CORPORATION, South Devonshire, showed pictures and distributed literature demonstrating the suitability of this spa as an alternative to continental winter resorts for those who cannot travel abroad.—INGRAM AND ROYLE (45, Belvedere-road, S.E.) produced a fine display of natural mineral waters, salts, and pastilles, calling attention to the fact that the natural aperient mineral water, Hunyadi Janos, can now be supplied to meet any demand.

MEDICAL PUBLISHERS.

Medical books were shown by ADLARD AND SON AND WEST NEWMAN, Ltd. (23, Bartholomew-close, E.C.); BAILLIÈRE, TINDALL AND COX (7 and 8, Henrietta-street, W.C.); WILLIAM HEINEMANN (20, Bedford-street, W.C.); H. K. LEWIS AND CO., LTD. (136 and 140, Gower-street, and 24 and 28, Gower-place, W.C.); and STANLEY PHILLIPS (45, Brondesbury-road, N.W.).

A similar exhibition will be held in the Philharmonic Hall, Liverpool, from Monday, Nov. 22nd, to Friday, 26th.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Lt.-Comdr. J. Kirker to be Surg. Comdr.

ROYAL ARMY MEDICAL CORPS.

Maj.-Gen. C. W. Mainprise, late R.A.M.C., retires on retd. pay.

Col. J. M. Sloan, late R.A.M.C., to be Maj.-Gen.

Lt.-Col. G. W. G. Hughes retires on retd. pay.

Maj. W. E. Marshall is secd. for duty with the Sudan Def. Force.

Majs. T. C. R. Archer and W. R. O'Farrell are restd. to the estabt.

Maj. A. A. Meaden to be Lt.-Col, vice Lt.-Col. G. W. G. Hughes to retd. pay.

Maj. J. A. Turnbull to be Lt.-Col., vice Lt.-Col. and Bt. Col. C. R. Evans, promoted to Col.

The undermentioned Capts. relinquish the temp. rank of Maj.: F. G. A. Smyth, W. E. Tyndall, F. C. Tibbs, H. T. Findlay, J. H. C. Walker, and W. H. Ferguson.

Capts. to be Majs.: F. G. A. Smyth, E. F. W. Mackenzie (Prov.), J. Biggam, C. Scales, D. Pottinger, J. McFadden, J. McP. Mackinnon (Prov.), D. Bell, J. S. K. Boyd, W. S. Martin (Prov.), J. J. Magner (Prov.) and remains secd., A. F. I. Patterson, G. D'R. Carr, G. P. Kidd, F. R. Fletcher, and H. W. Browne (Prov.).

Capt. B. Malaher retires, receiving a gratuity.

TERRITORIAL ARMY.

Maj. (Prov.) F. H. White is confirmed in his rank.

ROYAL AIR FORCE.

Flying Officer G. J. Hanly is granted a permanent commission in this rank.

Flying Officer R. F. G. Dickson relinquishes his short service commission on account of ill-health.

INDIAN MEDICAL SERVICE.

Capt. Sorab Dinshah Billimoria and A. S. Fry to be Majs.

ALEXANDRA DAY.—The collections on Alexandra Day in London, including a little over £4000 from other sources, produced £50,118, as compared with £45,088 last year. The expenses were £8201, £6303 of which was the cost of the roses made by cripples.

Correspondence.

"Audi alteram partem."

THE RISK OF SUICIDE IN MENTAL CASES.

To the Editor of THE LANCET.

SIR,—In commenting on a recent case of suicide at Bournemouth, the coroner appears to have considered those in charge of the patient at fault in not providing bars to the window of the bedroom. The facts of the case are simple. The patient was under certificates, on leave of absence from a licensed house, and staying at a branch house at Bournemouth. She was known to be suicidal and a nurse was continuously in attendance. She attacked the nurse and succeeded in throwing herself from a first floor room by squeezing through a narrow opening in a casement window. Death was attributed to shock rather than injury.

The coroner's criticism raises matters of importance which concern the treatment of individual patients, the care of the insane generally, and the responsibility of the nursing and medical professions.

With regard to the individual patient, it is necessary to remember that not rarely the best chance of recovery involves some measure of risk. Safety first may mean bad treatment. In this case the patient had been three years in the parent institution, and it may be presumed that the removal to the beautiful seaside home was designed to give a new outlook on life and increase the prospect of recovery. This end would have been defeated if she had been placed in a strong room with barred windows. There was, perhaps, some force in the remark of the foreman of the jury that such patients should be nursed on the ground floor, but even so, anybody who can get out of a window may get away and find a means of ending life. No one would attempt to justify carelessness or any laxity in taking precautions when patients are known to be suicidal, but broadly speaking, it is safer to trust to personal supervision than to bars or other mechanical contrivance.

That the precautions were inadequate in the present case does not necessarily mean that the arrangements at the seaside home were wrong. In dealing with such patients in spite of every care accidents happen from time to time. In the treatment of insane persons generally this same problem is ever present. Although a considerable percentage of persons under care have contemplated suicide, only a very small number are at any given time actively suicidal. Unfortunately it is impossible to be quite sure who these are, or special measures for their treatment could be made.

The question then arises, how far must the comfort and welfare of the majority be sacrificed for the safety of the few. High walls, unclimbable fences, barred windows, strong rooms, and even locked doors are rapidly disappearing from our mental hospitals, and we trust public opinion will support the change. If remarks, such as those of the coroner in this case, influence the authorities it will mean a set-back in the treatment of the insane.

I do not forget that a mental hospital must be a place of safety, and that in many cases with suicidal tendency the first element in treatment is mental rest—a rest from the constant temptations which ordinary home conditions afford. But this safety is as already said best secured by personal supervision, which must always be the first line of defence. The second line—viz., the structure and planning of the buildings and gardens—gives scope for great skill, in order that additional security can be obtained without interfering greatly with ordinary conditions of life. In certain wards the upper windows must in some way be secured and to do this without hindering with free ventilation is extremely difficult, especially in hot climates. But in spite of all contrivances the

essential difficulty will remain. If the institution is made really safe it becomes a prison; if the patient is allowed no access to tools, employment therapy is impossible; if escapes are to be wholly prevented country walks cannot be permitted, and so forth.

I believe that the true interests of the insane are best secured by a liberal policy. It may, perhaps, lead now and then to accident, but on the whole it will prevent many accidents and happier conditions of life will give better results.

Lastly, the responsibility of the nurse and the physician. Although a nurse is not required to determine whether a patient is to be deemed suicidal, her responsibility is great. One painful feature of many such cases is the way in which the nurse's good nature may be imposed upon. A nurse gave up a half holiday offering to take a patient for a cycle ride; the patient was better mounted, outrode the nurse uphill, and escaped on to the railway. Fortunately she was found and returned safely. A patient threw a cup of hot tea in a nurse's face and with the broken fragments of china seriously cut her throat. She eventually recovered. In the present case the nurse was attacked and overpowered. We must not overlook the fact when personal supervision is substituted for mechanical contrivances it throws great responsibility on the nursing profession. How often have nurses and doctors been deceived by plausible tales or tempted in giving liberty by skilful feigning of convalescence! On the other hand, how often the beginnings of improvement have been stimulated by the nurse interpreting instructions in a liberal, intelligent manner! Have we not often heard patients say that they would never have recovered but for the encouragement given by such and such a nurse? The newspaper account said nothing about the nurse in this case, but surely it illustrates forcibly the responsibility which rests on the nursing profession in this connexion.

In the practice of psychiatry there is constant anxiety with regard to suicidal patients. Familiarity does not loosen the subconscious strain. Although the majority of accidents occur unexpectedly and but rarely to patients who have been recently examined with care, nothing will entirely eliminate the danger. It is impossible to see sufficiently into the inner workings of the mind, and even if the immediate risk be correctly estimated how can future fears and impulses be foreseen? There is a certain type of patient, fortunately not common, who sooner or later will succeed in ending his life in spite of all precautions. The anxiety is not so much in regard to these, but in respect to the doubtful cases, and in those approaching convalescence.

The decision whether a patient must be treated as suicidal, the degree and kind of supervision necessary, what occupations are to be encouraged, and when increased liberty can be given—indeed, the decisions affecting the whole manner of life—inevitably involve great responsibility. Little do the public realise the wear and tear this means. Frequently risks are taken after mature consideration in the hope of awakening healthy interests, and then the position corresponds with that of a surgeon who undertakes a grave operation on the chance of saving life. How differently the public regard the two cases!

All interested in psychiatry welcome the fullest investigation when an accident occurs, the welfare of the insane patient is rightly the concern of the King and his representative, but it is very doubtful whether the English system of public inquiry serves any useful purpose, whilst the newspaper accounts give relatives needless anxiety. The Scottish procedure by private inquiry is preferable. Let carelessness and abuses be exposed, but let us avoid the pain and discouragement caused by needless publicity.

I am, Sir, yours faithfully,

Malton, Oct. 11th, 1926. BEDFORD PIERCE.

IRRADIATION AND CELL-DIVISION.

To the Editor of THE LANCET.

SIR,—In a leading article on this subject in your issue of Oct. 9th, doubt is cast on the correctness of the statement that dividing cells are more sensitive to radiation than growing cells. In support of this, mention is made of the work of Strangeways and Oakeley, who confirmed using in vitro cultures what had been previously observed by Albuti and Politzer with tumours, that an important action of radiation is to inhibit mitosis. Mottram, Scott, and Russ confirmed this, using a statistical method in the case of Jensen's rat sarcoma, and the results suggest that it is the growing period that suffers inhibition rather than that there is a block in the change over from growing to dividing phases. But these findings in no way negative the statement that dividing cells are killed more easily than growing cells. This has been observed by several workers, and Mottram has shown that in the case of the ova of ascaris, dividing ova are approximately eight times more sensitive than growing ova. Further, Strangeways and Hopwood have shown that cells radiated during mitosis complete the cell division in a normal manner.

All these findings are reconcilable, though perhaps difficult to expound. When a cell is radiated during mitosis then the mitosis is completed normally, the growing stage of the daughter cells is prolonged, and the onset of the following mitosis delayed. After a time an abnormal mitosis occurs, the cell may die and disintegrate without completing this cell division, or abnormal daughter cells may result which subsequently die. When a cell is radiated during the growing stage, similar effects occur, but they are much less marked; the delay in mitosis is less prolonged, the following mitoses and the resulting daughter cells are not so abnormal, and death of the cell less likely to occur; complete recovery may occur, but is very slow, abnormal cells persist for weeks, and the rate of growth retarded by the radiation may take months to return to normal.

This very shortly describes what appears to be the sequence of events in the life-history of cells following radiation. Detailed discussion of these changes is desirable; my aim in this letter has been to make a concise statement. Of course, the fact that dividing cells are more sensitive to radiation than growing cells does not explain the fact that rapidly growing tumours are especially sensitive to radiation; for the reason that when a tumour is radiated, even a rapidly growing one, only a very small proportion of the cells are undergoing mitosis during radiation. The explanation for this lies elsewhere.

I am, Sir, yours faithfully,

J. C. MOTTRAM.

The Radium Institute, London, W., Oct. 11th, 1926.

PREPAREDNESS AGAINST SMALL-POX.

To the Editor of THE LANCET.

SIR,—In view of the fatal cases of small-pox reported from Willesden and Lambeth, and of the further importation of the same type of infection as shown in a severe confluent case in Islington this week, may I make a strong appeal to your readers to help to make known the elements of small-pox diagnosis to every one of our colleagues in the profession? In 1913 I wrote: "It is essential to realise the mischief which may be done by unrecognised cases of small-pox. There is hardly any disease of which the prompt recognition is more important to the general community. Almost every outbreak in London in recent years has been started or propagated and prolonged by unrecognised cases."—"How to Diagnose Small-pox" (p. 1).

Our profession has made a remarkable response to those indications. Missed cases are strikingly fewer than they used to be, but for that very reason they are now all the more conspicuous. Our principal duty, I submit, at a time like the present, is to make

sure that we have done all in our power to make the necessary knowledge known. Speaking for myself, although something has been done, there is much more that I should like to have been able to do. This is the point. Every single qualified man in the Kingdom should have a knowledge of the simple ground-work of small-pox diagnosis in his hands and in his head. It is more imperative than a knowledge of the femoral artery.

We all know the anxiety and risk of being unprepared to meet a possible emergency; the risk of losing patient, reputation, and practice. That unpreparedness should never be allowed to continue if it can possibly be remedied. With this in view, I ask your permission again to mention two items especially. One, a booklet termed "Small-pox Notes for Medical Practitioners, with Hints on Diagnosis" (price 8*d.*). The other, a reprint of a post-graduate lecture entitled "The Accurate Diagnosis of Small-pox" (price 6*d.*). Both are obtainable from either the *Medical Officer* weekly journal, 36, Whitefriars-street, or from George Wareham, 1, Budge-row, Cannon-street, E.C. 4. To overcome the difficulty caused by an author having to mention his own works, and other difficulties in connexion with their distribution, their issue is being handed over to the Small-pox Clearance Voluntary Fund, of which for the time being I am hon. secretary. The main aim of this fund is the complete clearance of small-pox out of the country, that being a business-like and practical proposition.

Some 3000 practitioners have been provided with one or the other of the above-mentioned booklets so far, principally owing to the fact that many public authorities, on the recommendation of their responsible officers, have distributed copies to all the practitioners in their respective areas, an eminently reasonable proceeding considering the value of the public service rendered by practitioners in this field of work. And in many cases this precaution has been wisely taken *before* the appearance of small-pox. Reports show that such an issue is greatly appreciated. Practitioners are forewarned and forearmed. Their own confidence and standing are increased; the hands of the medical officers of health are strengthened; and generally speaking, there is a heightening of the efficiency of the whole anti-small-pox line which at the present time is the sole barrier standing between our people and the catastrophe of a small-pox epidemic.

So far as is known, small-pox has never gained a foothold in any area where the profession has been so equipped.—I am, Sir, yours faithfully,

W. McC. WANKLYN.

Luxemburg-gardens, Hammersmith, W., Oct. 11th, 1926.

ECONOMY IN IODINE.

To the Editor of THE LANCET.

SIR,—At a time such as the present when every possible effort has to be made to reduce waste and unnecessary expenditure of money or material the following small modification of a common practice may prove useful to your readers. The usual hospital practice of supplying tincture of iodine to dressing-rooms and wards is by means of an 8-oz. stoppered bottle. The tincture is applied either by means of a sponge or by gauze soaked either by direct pouring or by the very wasteful method of decantation into a small basin. If the iodine be put up in 4-oz. dropping-bottles, such as are used for bacteriological stains, it can be applied with far greater ease and accuracy. The amount of iodine which reaches the required spot is far greater and the waste is reduced to negligible proportions. Since using this method in certain ambulance rooms under my charge where the daily attendances for minor injuries are large, I have been enabled to reduce the expenditure on this single item by over 50 per cent. The saving in terms of money is considerable.—I am, Sir, yours faithfully,

Beeston, Notts, Oct. 8th, 1926. L. P. LOCKHART.

MILK DESIGNATIONS.

To the Editor of THE LANCET.

SIR,—I observe the correction of Mr. Miles, the secretary of the Certified Milk Producers' Association, in your last issue, but unless I am mistaken the very limited public which knows anything at all about the official special designations of milk has formed its own euphemisms, and calls "Grade A (Tuberculin Tested) Milk" "Grade A Certified Milk." Be that as it may, I have never been able to accept as of any real significance the Milk (Special Designations) Regulations. To my mind it is hopeless—quite hopeless—to expect the general public, for whose benefit the whole milk trade—producers and distributors alike—exists, even to commence to remember, much less to understand, the various grades set up in the regulations. These regulations stand condemned because they do not prohibit the sale of dangerous milk. They do not forbid the sale for human consumption of milk containing the bacillus of dung, nor the bacillus of tuberculosis.

I am, Sir, yours faithfully,

S. G. MOORE, M.D.,
M.O.H., Huddersfield.

Oct. 9th, 1926.

WANTED, AN APPENDIX.

To the Editor of THE LANCET.

SIR,—For the last four months I have been endeavouring to obtain a freshly excised appendix from a certain type of subject. I need an appendix which has been excised "in the cold" and which is, therefore, not particularly inflamed. I have been able to obtain a number of these from normal subjects from my own hospital; but I wish, in order to round off a piece of research, to obtain such an appendix excised from a person with a well-marked protein sensitisation; for example, from a hay-fever subject, a horse asthmatic, or one with a well-marked food idiosyncrasy. I think I am more likely to obtain this through some private practitioner than from the hospital theatre, because the practitioner knows more about the past history of his cases. It would be necessary to get into touch with such a practitioner say a week before the appendectomy, in order to verify the sensitisation and to make suitable arrangements for receiving the appendix. For example, it must be dropped quite fresh into Ringer solution through which a stream of oxygen passes, and it should be in my laboratory within half an hour of excision if possible.

I know this is asking a very great deal, but unless I can obtain such a specimen, or specimens, within the next two months, then several months of careful research work will have been spoilt. May I ask for your assistance in the matter?

I am, Sir, yours faithfully,

St. Mary's Hospital, Oct. 11th, 1926. J. FREEMAN.

THE ROYAL FAMILY AND YORKSHIRE HOSPITALS.—On Thursday in last week Princess Mary opened the new out-patient department of the Victoria Hospital for Sick Children at Hull, and made a tour of the wards. On Tuesday last the Prince of Wales laid the foundation-stone of the Queen Alexandra Memorial Wards of the new infirmary at Doncaster. The buildings will cost £300,000. The two enlargements which have been made in the last 20 years have proved to be inadequate.

WORK OF MANCHESTER HOSPITALS.—Manchester has had a Civic week from Oct. 2nd to Oct. 9th, and interesting accounts have been published of the various agencies for social service, including the medical charities of the city and hospitals in the neighbourhood, which form the largest group of hospitals outside London. The number of beds in these institutions is almost double the number available in Liverpool or Birmingham. In 1925, in Manchester, 42,000 cases from outside districts were treated. Only £110,000 were subscribed by the districts concerned. The new patients alone every day amount to 820, and each day over £1000 is needed to cover the cost of treatment. At the Royal Infirmary one accident case is attended to every 20 minutes. In 1920 the daily average was 50. In 1925 there were 29,347, a daily average of 75.

MEDICAL ARTICLES IN THE GENERAL PRESS.

AT a meeting of the St. Pancras Division of the B.M.A. on Tuesday last, Oct. 12th, Sir HUMPHRY ROLLESTON took the chair, and introduced a discussion on the

Aims and Methods of Health Education,

arising out of an address delivered to the meeting by Sir Thomas Horder (vide p. 795). The object of the meeting, he said, was to facilitate exchange of private views on the relations of the medical profession with the general press. It was desirable, in his opinion, that the public should know as much as possible about preventive medicine, always provided that curative medicine remained in qualified hands. He did not agree that instruction on medical matters through the lay press was of no use. A writer with the necessary qualifications, medical and journalistic, could do valuable service. It must be agreed, however, that advertising by this means was in the interests neither of the profession nor the public. It was often desirable that someone with authority should sound a note of warning. The object of this discussion was to decide where the line was to be drawn between the warning of one possessing authority and the advertisement of one without it.

Sir THOMAS HORDER then delivered his address, the points and humour of which were appreciated by a good audience, and concluded in order to give a direction for discussion by proposing a resolution :—

"That the education of the public in health and in the prevention of disease being of national importance, the dissemination of views on health topics should be encouraged. Actual medical instruction might well be controlled by a representative body and editors should not ask men in private medical practice to write articles under their own name."

Mr. MCADAM ECCLES said that all agreed that the public should be instructed in health matters, but anything published should have as its first and only object the good of the public. Anything savouring in the least of self-advantage must be banned, and preferably by the lay press itself. It might be possible to arrange a meeting of representative editors of the public press and to determine that this scrutiny of health articles should be carried out for the good of the land and the people. A burning question was whether articles that were truthful, sane, and useful should be signed. The best method was to print the degrees without the name ; these were what, for the responsible editor, gave real prestige to the article.

Dr. GRAHAM LITTLE mentioned a personal experience in which the press had reported as a serious opinion a joke which he had made at a medical meeting, instancing the episode as an illustration of how little the lay press discriminated in publishing medical matter. If the expert would not address the public the inexpert would, and much harm was done to the profession by the rubbish that was published nowadays. He suggested that they should test the receptivity of the press and public by giving them serious articles to read, written by acceptable authorities. He feared that neither were yet ready for such articles, but the profession must nevertheless try to supply them.

Dr. ALFRED COX wished to make two points, one of which referred to the lay press and the other to certain members of the medical profession. The first was that the press would not succeed in their laudable desire of raising the standards of their own profession if they continued to trample on the traditions of others. He wished to ask them if they did not think that the plea of the medical profession, that their traditions should be respected, had something in it. His second point was that medical men could not expect the lay press to believe that medical traditions existed if they themselves did not manifest adherence to them. He quoted the following words from Sir William Osler's "Æquanimitas" :—

"In the life of every successful physician there comes the temptation to toy with the Delilah of the press. There are times when she may be courted with satisfaction, but beware ! Sooner or later she is sure to play the harlot and she has left many a man shorn of his strength—the confidence of his professional brethren."

Mr. E. B. TURNER, seconding the resolution, said that he had just emerged from a maelstrom of health weeks, and it had been almost pathetic to see the eagerness of the public to learn of health matters that they might be helped to prevent disease and preserve life. Should there be no control there would be great danger that editorial staffs might pick and choose those whom they considered suitable to educate the public. There was no question that health propaganda could be carried on without any personal advertisement whatsoever if the individuals who undertook the work so chose. He hoped that they meant to do so and to remember what their profession was, that they might do nothing to lower its proud position to the level of an advertising trade.

Miss C. A. MORTLOCK-BROWN spoke of the difficulty of serving two masters, medicine and literature.

Colonel HOWARD MUMMERY said that only the middle part of the resolution could arouse any difference of opinion or problem. How could the profession set up a representative body to which the public as a whole would listen and which yet would exercise some control ? No organisation probably filled the bill completely at present, so that there was reason for the formation of an ad hoc body.

Sir CHARLES GORDON-WATSON said that the public should look to their general practitioner for their advice on health and pay his fee for it and not a penny to the daily paper. The lay press was responsible for the demand for signed articles ; the public did not want the information ; if the press wanted it let them get the best and get it under authority.

Dr. SCOTT STEVENSON said that editors and medical journalists would not stand such a committee. He had written many articles for the press and had never had one refused because it was unsigned. Leader-writers did not sign political articles ; why should the medical writer ? He always skipped a signed article because he knew that it was one which would not carry sufficient weight to justify publication without the signature.

Prof. W. E. DIXON said that the proposed method was an impossible one ; nobody would read the made-up articles of a committee. The country prided itself on a free press, and on encouraging writers with some virility of style ; and their abolition would be a loss and no gain. No editor would accept the platitudes laid down by any medical society.

Prof. V. H. MOTTRAM said that it was most important for every man to have an overhaul at some period in his life so that he might know what his own normal was, and for the public to be educated in such subjects as the early symptoms of tuberculosis.

The resolution was then passed by the meeting without a dissentient vote.

Sir THOMAS HORDER, in replying, said that he had hardly mentioned the difficulties of the whole question nor was he optimistic that his suggestions would be popular. He was, however, speaking to doctors and not to the press, whom he could not venture to instruct how to carry on their profession. The views of the press on what constituted news being as they were, they could not be expected to accept forthwith the maxims put forward by a body such as he suggested. When the effect of the resolution had taken shape it might be said that there was a body who would provide authoritative material on health matters if the press wanted it. There was the test ; if they did not want it, they would show that they wanted, not to instruct the public, but to print the titles of eminent medical writers. Medical men did not know where they stood, and wished to do so ; they were still asked for their photographs and for picturesque views. His resolution would do no harm, but he had received no constructive suggestions from the meeting.

Medical News.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the monthly meeting of the Faculty, held on Oct. 4th, the following were admitted (after examination) as Fellows :—

Adam Barr, Andrew Allan Bell, Joseph Alexander Bingham, Donald M'Kenzie Black, Andrew Duffield Blakely, John Miller Chrystie, Thomas Hall James Douglas, Alexander Garrow, Zafar Husian Jafri, William Douglas MacFarlane, Edwin Gordon Mackie, Thomas Kay MacLachlan, William M'William, George Thomson Mowat, William Alexander Sewell, Harold Edward Whittingham, John Miller Young, and Roy Frew Young.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—The second of the series of lectures on Emergencies in Medicine and Surgery will be delivered by Mr. Joseph Adams on Acute Appendicitis, on Thursday, Oct. 21st, at 5 P.M., in the lecture hall of the Medical Society of London, 11, Chandos-street, W. A special lecture-demonstration on cataract will be given by Mr. A. Caddy at the Royal Westminster Ophthalmic Hospital, at 5 P.M., on the same day. Both the lecture and demonstration will be open to members of the medical profession without fee. The following courses have been arranged: Nov. 1st to 13th, a course in medicine, surgery, and the specialties for general practitioners, at the Hampstead General Hospital; Nov. 1st to 30th, a course in venereal disease at the London Lock Hospital; Nov. 15th to Dec. 4th, a course in gynæcology at the Royal Waterloo Hospital; Nov. 15th to Dec. 11th, a course in dermatology, including pathology if desired, at St. John's Hospital; Nov. 22nd to Dec. 18th, a course in neurology at the West End Hospital for Nervous Diseases (late afternoons); Nov. 29th to Dec. 11th, a course in diseases of the chest at the Victoria Park Hospital; Nov. 22nd to 27th, a course in proctology at St. Mark's Hospital, and from the same date a course for general practitioners at the London Temperance Hospital. Copies of all syllabuses, of the General Course Programme of the Fellowship, and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship at 1, Wimpole-street, London, W. 1.

CHADWICK PUBLIC LECTURES.—On Tuesday and Wednesday, Oct. 19th and 20th, at 5 and 8 P.M. respectively, in the Barnes Hall of the Royal Society of Medicine, 1, Wimpole-street, London, W., lectures on the Development and Present State of Public Health in Germany will be given by Prof. R. Abel, Director of the Institute of Hygiene at Jena University. Sir William Collins will take the chair at the first lecture and Sir Arthur Newsholme at the second. Admission to these and other lectures will be free without ticket. At Southampton University College on Monday evening, Oct. 25th, Mr. H. T. Calvert, D.Sc., of the Ministry of Health, will speak on the Activated Sludge Process of Sewage Treatment; Sir Robert Greig, Chairman of the Board of Agriculture for Scotland, will lecture on Deficiency Diseases of Animals in Relation to Public Health at the Royal Society of Arts on Monday, Nov. 1st, at 8 P.M.; and Sir Henry Gauvain, medical superintendent of Lord Mayor Treloar Cripples' Hospital and College, will give an address on Dec. 2nd at the house of the Royal Society of Medicine on Sun, Sea, and Open Air in Relation to Health and the Prevention of Disease. Other arrangements include a lecture at Sheffield by Mr. H. E. Stilgoe, chief engineer of the Metropolitan Water Board, on Nov. 22nd, on Water-supply and its Relation to Public Health, and one by Mr. William A. Robson on Legal Conceptions of Public Health at the Royal Sanitary Institute on Monday, Dec. 13th, at 8 P.M. Particulars of the lectures may be had from Mrs. Aubrey Richardson at 13, Great George-street, Westminster.

FLEET-STREET WEEK FOR BART.'S.—"Fleet-street" has been holding a "week" for the benefit of St. Bartholomew's Hospital. It began officially on Sunday, but there was a popular opening on Saturday in the shape of a long procession of decorated vehicles from the Victoria Embankment, through Queen Victoria-street, into the heart of the City and back by Holborn Viaduct, Fetter-lane, and Fleet-street to New Bridge-street. The carriages bore many topical representations, including some Bart.'s men in bed nursing "carnival babies." The fuselage and engine of the aeroplane in which Sir Alan Cobham flew to Australia and back were mounted upon one of the vehicles. It is hoped to raise £20,000 by the week, and much money was given by the crowds on Saturday. On Tuesday an auction sale at Bush House was opened by the Lady Mayoress of London, and an Empire concert was given in the Kingsway Hall, attended by the Maori football team. The "week" closes to-day (Saturday).

HARVEIAN SOCIETY OF LONDON.—Owing to the further generosity of Mr. George Buckston Browne, the sum of £1000 has been added to the Memorial Prize Fund which bears his name. The council of the society will, therefore, in the future be in a position to give more valuable prizes for successful essays.

HUNTERIAN SOCIETY.—The first dinner meeting of this society will be held at Simpson's Restaurant, 2 and 3, Bird-in-Hand-court, 77, Poultry, Cheapside, on Monday, Oct. 18th, at 7.30 P.M. At about 8.30 P.M. Mr. A. E. Mortimer Woolf will deliver a presidential address on Pain.

INCORPORATED ASSOCIATION OF HOSPITAL OFFICERS. Sir Arthur Stanley will deliver a presidential address at the headquarters of the association, 28, Bedford-square, London, W.C. 1, on Wednesday, Oct. 27th, at 7 P.M.

TAVISTOCK CLINIC MATINÉE.—A special matinée is to be given in aid of the Tavistock Clinic on Friday, Oct. 22nd, at 2.30 P.M., at His Majesty's Theatre, Haymarket, London. The clinic was founded in 1920 to provide treatment for war sufferers and others who are unable to pay specialists' fees. Tickets for the performance may be had at the theatre or from the clinic, 51, Tavistock-square, W.C.

EUGENICS EDUCATION SOCIETY.—The first meeting of the session was held on Wednesday, Oct. 13th, at 8.30 P.M., when Major Leonard Darwin gave a presidential address on Anthropological Studies of Children. There will be three other lectures this year, on Nov. 10th and 24th, and Dec. 8th, by Prof. C. E. Spearman, Mrs. Sturge Gretton, and Prof. A. M. Carr-Saunders. The society's address is 20, Grosvenor-gardens, London, S.W. 1.

MEMORIAL TO A DOCTOR.—A tablet has been placed in the Banbury Infirmary in memory of Dr. Evan Christopher Pritchard, and in recognition of his valuable services to Banbury and neighbourhood and to the Banbury Infirmary. A cot in the children's ward has also been dedicated to the doctor's memory and has been endowed in perpetuity by money contributed by 450 subscribers.

POST-GRADUATE COURSES AT VIENNA.—The syllabus of post-graduate lectures in German, arranged by the Medical Faculty of the University of Vienna, may be had free of charge from the Kursbüro der Wiener Medizinischen Fakultät Wien VIII, Schlösselgasse 22. Information about board and lodging is also given, but applicants by letter are asked to enclose an international stamp coupon for the reply. The arrangements include international finishing courses, lasting two weeks each, and held four times a year (November, February, June, and September), which will deal with progress in the special branches of medicine.

SOCIETY OF MEMBERS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The annual general meeting of this society will be held at the Palace Hotel, Welbeck-street, Cavendish-square, London, W., to-day (Friday, Oct. 15th), at 4 P.M. Amongst activities proposed for the coming year are the preparation and presentation of a Bill to Parliament, and the presentation of a direct petition to the Privy Council. At a meeting on Sept. 24th the council of the society decided to nominate one or two women to join the council. The hon. secretary of the society is Mr. Sidney C. Lawrence, 106, Richmond Park-road, Winton, Bournemouth, Hants.

PORT HEALTH OFFICERS AT LIVERPOOL.—Medical officers of the North Sea and Baltic ports, who, during the past few months, have been making a tour of inspection under the auspices of the League of Nations, visited Liverpool on Oct. 7th. They visited the Government Wool Disinfecting Station, and the Seamen's Dispensary where tropical, venereal, and other diseases are treated. They were also shown how the inspection of ships' rats suspected of carrying bubonic plague is carried out in the city laboratories. About 10,000 rats are examined each year. The visitors, together with the Liverpool consuls of the countries they represented, were the guests of the Lord Mayor at the Town Hall.

THE NEW PROCEDURE IN CORONERS' COURTS.—At an adjourned inquiry held on Oct. 5th at Alderley Edge into the circumstances of the death of a girl of 20, Mr. H. C. Yates, the East Cheshire coroner, said that formerly, when a person died from injuries inflicted upon him or her by some other person, and that person was in custody charged with the offence, the case was gone into fully, both at the police-court and by the coroner. This duplication of evidence had now come to an end. The coroner stated that he had communicated the course he proposed to adopt in this case to the Director of Public Prosecutions, and with his approval was only going to call three witnesses, and would adjourn the inquiry until after the assizes had been held.

HOSPITAL DINNERS.—The annual dinner of old students of *St. Thomas's Hospital* will be held on Friday, Oct. 29th, at 7 for 7.30 P.M., at the Hotel Victoria, Northumberland-avenue. Dr. R. Percy Smith will take the chair.

The annual dinner of past and present students of *University College Hospital* will be held at the Hotel Cecil on Wednesday, Oct. 27th, at 7 for 7.30 P.M., Dr. Philip D. Turner in the chair. Tickets may be had, before Oct. 25th, from Mr. Gwynne Williams or Dr. F. M. R. Walshe, at the Medical School.

NEW SUSSEX HOSPITAL FOR WOMEN AND CHILDREN. Although this Brighton hospital was only opened in 1921, the demand on its accommodation became so heavy that extension was soon needed. Thanks to a promise of £1000 by Mr. Bernhard Baron, supplementing the result of the governors' appeal for funds for building a new wing, the extension will now be put in hand. The sum of £600 has been given by a lady, who wants to remain anonymous, for the purchase of radium for cancer research work. The hospital is entirely staffed by women doctors.

NEW MATERNITY HOSPITAL AT LIVERPOOL.—Although the activities of this new maternity hospital have been in full swing for some time, it was only on Thursday, Sept. 30th, that the formal opening took place. This ceremony was performed by Miss Hartley, to the generosity of whose father, the late Sir William Hartley, the institution owes so much. Previously, however, there had been a large public meeting, presided over by the Lord Mayor, at which Sir George Newman and Dame Mary Scharlieb were present. The former spoke of the great mortality still attendant year by year upon childbirth. He envisaged the new maternity hospital as a training ground for doctors and nurses which would go far towards reducing such risks. The latter referred to the fact that during the last year 325 women had had to be turned away, to sink or swim, for lack of accommodation. This was not worthy of a great and progressive city like Liverpool, and she trusted that very speedily the full complement of 100 beds would be available.

THE LATE DR. F. H. TETLEY.—Dr. Frederick Harrison Tetley, who died at Pool on Oct. 4th, was the third son of the late Mr. George C. Tetley, of Bradford. He studied at the University of Edinburgh and after qualifying as L.R.C.P. & S. Edin. in 1877 held the appointment of house physician at Glasgow Royal Infirmary. Settling in practice at Keighley, he became honorary surgeon to the Victoria Hospital, and subsequently at Bungay in Suffolk, was honorary consulting surgeon to the All Hallows' Hospital, Ditchingham. About 25 years ago he relinquished general practice and wintered each year in Las Palmas, where he was honorary surgeon to the Victoria Hospital for Seamen. On the outbreak of the war Dr. Tetley was appointed surgeon to the Guards at Caterham, and later physician to the City of London War Hospital, Epsom. He was also chairman of various medical boards, and at the close of the war acted as chairman of the pensions boards at Plymouth and other places.

LEAMINGTON SPA.—On Oct. 9th Sir Kingsley Wood, Parliamentary Secretary to the Ministry of Health, opened the enlarged pump-room and baths at Leamington in the presence of a number of medical guests. British spas, he said, would bear comparison, certainly in equipment, with any of their foreign rivals, and spa treatment should be made available under proper conditions to the greatest possible number of people—the rich and the worker alike. Within the last few days an important step had been taken by the National Conference of Friendly Societies at their annual gathering. They were asking the Ministry of Health to include spa treatment as one of the additional benefits under the National Insurance Scheme. The Federation of British Spas stated that some 30,000 cases might be treated at British spas up and down the country, and he could promise that the Ministry of Health would give the most careful and sympathetic consideration to the suggestion that spa treatment should be recognised as an additional benefit. He believed that this would do a great deal, not only for the spas but to check and counteract the ravages of rheumatism by making the spas available to a far larger portion of the community. A vote of thanks to Sir Kingsley Wood was proposed by Sir William Smith, and seconded by Dr. R. Fortescue Fox, who said that he had long looked forward to the time when the State would recognise the spas as a national asset. The effects of medicinal waters and physical treatment required much more careful study than they had received. The subject was calling out for research and modern methods made this possible. At Leamington, he thought, such investigation might well be carried on.

SMALL-POX IN LONDON.—Dr. Clarke Trotter, medical officer of health for Islington, informs us that a patient who had been staying in Paris from Sept. 11th to 24th was admitted to the Royal Northern Hospital, Holloway, on Thursday, Oct. 7th, and was isolated. On Monday, Oct. 11th, the diagnosis of small-pox was confirmed. Dr. Trotter believes that the infection was probably contracted between Sept. 22nd and 24th. The patient was staying at a hotel in the 9th arrondissement of Paris. As we reported last week (THE LANCET, p. 781) cases of small-pox contracted at Paris have been reported at Willesden, but the hotels were not the same, nor is there any known connexion between them. Small-pox is prevalent in Paris, but Dr. Trotter states that it is comparatively mild in character, whereas the new London cases are not. Fortunately, he says, the case admitted to the Royal Northern Hospital was isolated in good time.

BRITISH EMPIRE CANCER CAMPAIGN.—A quarterly meeting of the Grand Council was held on Oct. 12th, Lord Cave presiding. Sir Richard Garton, chairman of the Finance Committee, commented upon the heavy commitments of the Campaign and the ever-increasing calls upon the funds, occasioned by the increase in all directions in the number of research investigations. Mr. J. P. Lockhart-Mummery, chairman of the Executive Committee, informed the Grand Council that the visits of members of the Intelligence Committee to the principal American and Continental cancer research laboratories would be completed shortly, and their reports upon the most recent work on cancer research outside the British Empire would be laid before the Grand Council. Lieut.-General Sir John Goodwin reported that there would shortly be 19 county committees working in aid of local research centres or on the work of the general organisation of the Campaign. Sir William Milligan and Sir Robert Jones were unanimously elected to membership of the Grand Council. Prof. R. T. Leiper, F.R.S., was appointed a member of the Scientific Advisory Committee of the Campaign in place of the late Sir William Leishman.

DONATIONS AND BEQUESTS.—Mr. Samuel Turner, of West Kirby, who left estate of the gross value of £44,075, on the death of his wife, left £750 to the Hoylake and West Kirby Cottage Hospital and other bequests totalling about £9000. The ultimate residue of his property, which will amount to nearly £30,000, he left to the University of Liverpool, to be applied as the University authorities in their discretion may think fit for the furtherance and advancement of medical research into the diseases of phthisis and cancer and any kindred diseases.—Mr. Joseph Augustin Bellinger, of Sidmouth, Devon, retired photographer, who left £5542, bequeathed, subject to his wife's life interest: £100 to the London Hospital, "in grateful recognition of benefit received by me in 1854"; £100 to St. Bartholomew's Hospital, "in similar grateful recognition of benefit received by me in 1868"; £100 to the Devon and Exeter Eye Infirmary, "in similar grateful recognition of benefit received by me in 1888"; £100 to Charing Cross Hospital, "in similar recognition of benefit received by me in 1875." There were other legacies to Devon hospitals, and the ultimate residue of the property is left to the London Hospital, St. Bartholomew's Hospital, Charing Cross Hospital, the Devon and Exeter Eye Infirmary, Sidmouth Cottage Hospital, and the Devon and Exeter Hospital.—The late Mr. Pryce Thomas Williams, J.P., of Rhos-on-Sea, Colwyn Bay, left £1000 to Colwyn Bay Cottage Hospital and £500 to hospitals in Liverpool.—By the will of the late Mr. Robert William Hatfield, of Fern Bank, Malton, bequeathed on the death of his wife £1000 to the Malton Cottage Hospital.—Mrs. Margaret Hamilton Hamilton-Fellows, of Worplesdon, Surrey, bequeathed £1500 to the Boscombe and West Hampshire Hospital, to endow a bed in her memory; £1000 to the British Home and Hospital for Incurables, Streatham, for the same purpose; and £1000 each to the Royal Waterloo Hospital for Women and Children, the Royal Society for the Prevention of Cruelty to Animals, Dr. Barnardo's Homes, the Royal Surrey County Hospital, Guildford, St. Dunstan's Home for Blinded Soldiers, Sailors, and Airmen, and the Royal Ophthalmic Hospital. The testatrix also left her freehold house, 12, Cambridge-road, Battersea, to the National Society for Day Nurseries, and endowed the society with an annuity of £250, free of death duties, for the upkeep of the same as a creche.—Sir John Walker Craig, K.C., of Hove, Sussex, Recorder of Belfast, left £1000 to the Royal Victoria Hospital, Belfast, and the reversion of a further bequest to that hospital.—Mrs. Elizabeth Lavinia Cheshire, Handsworth, Birmingham, who left estate of the value of £29,959, left £3000 to her sister-in-law for life, and the residue of the property is left between the General Hospital, Birmingham; the Queen's Hospital, Birmingham; the Birmingham and Midland Free Hospital for Sick Children; the Birmingham and Midland Hospital for Women; and the Birmingham Royal Institution for the Blind.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
MONDAY, Oct. 18th.—8.30 P.M., SOCIAL EVENING. Fellows, Members of Sections, and their friends will be received in the Library by the President and Lady Berry. 9.30 P.M., Sir Arthur Keith: Address on John Bull: a Study in Anthropology (with illustrations).
TUESDAY.—5.30 P.M., Ballot for election to the Fellowship. 8.30 P.M., PATHOLOGY. Presidential Address by Dr. J. McIntosh.
WEDNESDAY.—5 P.M., HISTORY OF MEDICINE. Mr. Walter G. Spencer: Review of the "Proceedings" of the Section. Short Communication: Dr. LeRoy Crummer (Omaha Univ.): The Copperplates of Raynalde and Geminus. 8.30 P.M., SURGERY. Mr. Warren Low: Surgery and the Workmen's Compensation Act, to be followed by a discussion.
THURSDAY.—5 P.M., DERMATOLOGY. (Cases at 4 P.M.), Cases: Dr. F. Parkes Weber: Recklinghausen's Disease, Pigmentation of the Thigh, and Hypoplasia (Aplasia) Pilorum Moniliformis. Dr. G. B. Dowling: Lichen Nitidus: Confluent type, and Syphilitic Macular Atrophy. Dr. Haldin-Davis: Pigmentation of Unknown Origin. Prof. C. Rasch (Copenhagen): Some Historical and Clinical Remarks on the Effect of Light on the Skin and Skin Diseases.
FRIDAY.—5 P.M., STUDY OF DISEASE IN CHILDREN. (Cases at 4.30 P.M.) Clinical Meeting. 8 P.M., EPIDEMIOLOGY AND STATE MEDICINE. Dr. S. Monckton Copeman: Immunisation Methods in Infectious Diseases.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.
THURSDAY, Oct. 21st.—7.45 P.M., Opening Meeting. The chair will be taken at 8.15 P.M., and a paper will be read by Prof. N. Hamilton Fairley (Haffkine Institute, Bombay) on Studies in the Chemotherapy and Immunity Reactions of Schistosomiasis.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn-fields, W.C.
MONDAY, Oct. 18th.—5 P.M., Mr. C. E. Shattock: Surgical Conditions of Lymphatic Gland.
FRIDAY.—5 P.M., Sir Arthur Keith: Anatomy of the Sacro-iliac Region and its Application to Practice. (Demonstrations open to advanced students and medical practitioners.)

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, Oct. 18th. to SATURDAY, Oct. 23rd.—FELLOWSHIP OF MEDICINE (Special Lecture), Medical Society of London, 11, Chandos-street, Cavendish-square, W., Thurs., Oct. 21st, Mr. Joseph E. Adams: Acute Appendicitis.—ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, Charing Cross, W.C., Thurs., Oct. 21st, 5 P.M., Mr. A. Caddy: Special Lecture-Demonstration on Cataract.—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C. Intensive course in clinical laryngology, rhinology, and otology Operative class also.—COMBINED COURSE IN DISEASES OF CHILDREN, Paddington Green, Victoria Hospital and Children's Clinic. All-day course.—CHELSEA HOSPITAL FOR WOMEN, Arthur-street, S.W. Post-graduate course in gynæcology. Operations, demonstrations, and lectures.—ST. PETER'S HOSPITAL, Henrietta-street, W.C. Clinical course in Genito-Urinary Diseases, including cystoscopies and formal lectures dealing with various aspects.—LONDON SCHOOL OF TROPICAL MEDICINE, Endsleigh-gardens, W.C., Tues. and Thurs., 2 P.M., Clinical Demonstration. Further information from the Secretary of the Fellowship of Medicine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY. Oct. 18th.—2 P.M., Medical Cases in the Wards. 2.30 P.M. to 5 P.M., Medical, Surgical and Gynæcological Clinics. Operations.
TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.
WEDNESDAY.—2.30 P.M. to 5 P.M., Medical Skin and Eye Clinics. Operations.
THURSDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, and Ear Nose, and Throat Clinics. Operations.
FRIDAY.—2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.
On Tues., Oct. 19th, and Frid., Oct. 22nd, at 2.30 P.M., there will be special demonstrations of Medical Cases by Dr. L. R. Yealland and Dr. F. G. Crookshank respectively.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Oct. 19th.—5 P.M., Dr. H. W. Barber: Bacteriology and Mycology.
THURSDAY.—5 P.M., Dr. J. T. Ingram: Pathology Demonstration.

NATIONAL HOSPITAL, Queen-square, Bloomsbury, W.C.
MONDAY, Oct. 18th.—2 P.M., Dr. Hinds Howell: Out-patient Clinic. 3.30 P.M., Dr. Kinnier Wilson: Pontine and Medullary Syndromes.
TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Bernard Hart: The Psychoneuroses.
THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Dr. Riddoch: Some Sequelæ of Encephalitis Lethargica.
FRIDAY.—2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Dr. Collier: Lesions of the Mesencephalon.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street.
THURSDAY, Oct. 21st.—4 P.M., Dr. Nabarro: Meningitis in Children.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, Oct. 19th.—4.15 P.M., Mr. P. R. Wrigley: Common Lesions of the Rectum.
FRIDAY.—4.15 P.M., Mr. Wilson H. Hey: Mammary Cancer.

ANCOATS HOSPITAL POST-GRADUATE COURSE.
THURSDAY, Oct. 21st.—4.15 P.M., Mr. Harry Platt: Treatment of Common Injuries.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.
FRIDAY, Oct. 15th.—3.30 P.M., at the Royal Infirmary: Dr. Brockman: Conditions Simulating the Acute Abdomen.

ST. MARGARET'S HOSPITAL FOR WOMEN, Acomb-street, Whitworth Park, Manchester.
WEDNESDAY, Oct. 20th.—4 P.M., Dr. Howard Buck: The Acute Abdomen.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.
TUESDAY, Oct. 19th.—4 P.M., Sir Humphry Rolleston: High Blood Pressure from the Clinical Aspect. Discussion to be opened by Dr. James Orr.

Appointments.

EAVES, ELIZABETH C., M.D., B.S. Lond., has been appointed Honorary Consulting Neuropathologist, South Yorkshire Mental Hospital, Sheffield.

M'DANIEL, E., M.D., B.Ch. Belf., School Medical Officer, County Tyrone.

RAMAGE, J. H., M.B., Ch.B. Glasg., Medical Officer for Western District of Neilston.

Oldham Royal Infirmary: MCGOWAN, J. S., M.D., B.S. Lond., Honorary Consulting Surgeon; FORT, H. M., M.B., Ch.B. Manch., Honorary Acting Surgeon; BROOME, F. C. S., M.B., B.S. Lond., Honorary Assistant Surgeon.

Royal Alexandra Infirmary, Paisley: M'ARTHUR J. C., M.B., Ch.B. Glasg., Senior Resident House Physician; AULD, W. J. C., M.B., Ch.B. Glasg., Resident House Physician; HILL, J., M.B., Ch.B. Glasg., and M'NEIL, Ian H., House Surgeons.

University of Sheffield: BLAKELOCK, J. H., M.B., Ch.B. Sheff., Assistant Bacteriologist.

Certifying Surgeons under the Factory and Workshop Acts: SALMOND, J. R., M.B., Ch.B. Belf. (Measham, Leicester); MCCONCHIE, J. F., M.B., Ch.B. Edin. (Wolsingham, Durham); GRIEVE, C. B., M.B., Ch.B. Edin. (Falkland, Fife); COLLIE, A. E., L.M.S.S.A. (Newport, Isle of Wight).

Vacancies.

For further information refer to the advertisement columns.

Barrow-in-Furness, North Lonsdale Hospital.—H.S. £130.
Barry Urban District Council, Accident and Surgical Hospital.—H.S. At rate of £200.
Bethlem Hospital, Lambeth-road, S.E.—Non.-Res. H.P. £25 per quarter.
Brighton, New Sussex Hospital for Women and Children.—Hon. Clin. Asst.
Bristol Mental Hospital, Fishponds.—Third Asst. M.O. £350.
Cambridge, Addenbrooke's Hospital.—Electrical and X Ray Dept. Asst. P.
Cancer Hospital, Fulham-road, S.W.—H.S. At rate of £100.
Cardiff Royal Infirmary.—Ophth. H.S.
Central London Ophthalmic Hospital, Judd-street, W.C.—Asst. Surg.
Chichester, West Sussex County Mental Hospital.—Med. Supt. £900.
Douglas, Isle of Man, Noble's Hospital.—Res. H.S. £175.
East London Hospital for Children and Disp. for Women, Shadwell, E.—Res. M.O. £200. H.P. and Cas. O. At rate of £125.
Great Yarmouth General Hospital.—H.S. £150.
Hospital for Sick Children, Great Ormond-street, W.C.—Bio Chemist. £600.
Infants Hospital, Vincent-square, Westminster.—Pathologist.
Ipswich, East Suffolk and Ipswich Hospital.—Res. Surg. O., &c. £300.
Lancashire Education Committee, Edge Hill Training College, Liverpool.—Visiting Med. O. 100 guineas.
Lancaster County Mental Hospital.—Med. Supt. £800.
Leeds, Jewish Herzl Moser Hospital, Leopold-street.—Res. M.O. £50.
Mildmay Mission Hospital, Austin-street, Bethnal Green, E.—Asst. Cas. O. At rate of £100.
Miller General Hospital for South-East London, Greenwich-road, S.E.—Out-patient O. £150.
Macclesfield General Infirmary.—Second H.S. £150.

Metropolitan Hospital, Kingsland-road, E.—Sen. H.P., Sen. H.S., Jun. H.P., Jun. H.S., and two Cas. O.'s. All at rate of £100.
Otago Hospital Board, Dunedin, N.Z.—Med. Supt. £1000.
Otago University and Dunedin Hospital, New Zealand.—Medical Tutor and Sen. Res. M.O. Also Sen. Res. Surg. O. Each £400.
Plymouth, Royal Eye Infirmary.—Hon. S.
Portsmouth Royal Hospital.—Third H.S. and Cas. O. At rate of £150 and £100 respectively.
Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—Cas. O. At rate of £100.
Rochester, St. Bartholomew's Hospital.—Third Res. M.O. At rate of £200.
Roehampton, Ministry of Pensions Hospital, Queen Mary's.—Consulting S. £400.
Royal Northern Hospital, Holloway, N.—H.S. and H.P. Each at rate of £70.
St. Marylebone General Dispensary, 30, Marylebone-lane, W.—Hon. S. to Ear, Nose and Throat Dept.
Salisbury General Infirmary—H.S. £150.
Stamford, Rutland and General Infirmary.—H.S. £200.
The Chief Inspector of Factories, Home Office, S.W., announces vacant appointments for Certifying Factory Surgeons at Shaw (Lancs.), and Eyam, (Derbyshire).

Births, Marriages, and Deaths.

MARRIAGES.

BENNET—TANNER.—On Oct. 11th, 1926, at St. Matthew's Parish Church, Edinburgh, by the Rev. F. H. Martin, B.D., Captain John Bennet, M.B., Royal Army Medical Corps, youngest son of Mr. and Mrs. J. R. Bennet, Maxwelltown, to Margaret Scott, youngest daughter of the late Samuel Tanner, Plewlands, Edinburgh, and Hillwoods Mains, Ratho, and of Mrs. Tanner, 14, Montpelier Park, Edinburgh.
DOGGART—BLACK.—On Oct. 7th, at Succoth-place, Edinburgh, James Macdonald Doggart, B.A., of St. Andrews, to A. McCaig Black, M.B., Ch.B., daughter of the late Hugh Black, Rothesay.
DULAKE—ROBERTSON.—On Oct. 7th, at St. Saviour's, Hampstead, Lawrence Dulake, M.B., B.S., to Nina Robertson, M.B., B.S., D.O.M.S., third daughter of Mr. and Mrs. C. Kay Robertson, of Hampstead.
GRIMMER—SELWYN.—On Oct. 7th, at Holy Trinity Church, St. Nicholas-road, S.W., George Kerr Grimmer, B.A., M.D., F.R.C.S.E., to Lilian Florence Nash Selwyn, widow of George Alexander Selwyn, Boundaries-mansions, S.W.
MACKINNON—BACKLER.—On Oct. 7th, at St. Marylebone Parish Church, Dr. Colin Campbell Mackinnon, M.R.C.S., L.R.C.P., to Ruby Jessie, eldest daughter of Mr. and Mrs. Alfred J. Backler, of Linton, Cambs.
PEACOCK—WARENGHEM.—On Oct. 7th, at St. Maurice de Becon, Paris, Philip Redington Peacock, M.B., son of Mr. and Mrs. F. G. Peacock, Stormont-road, Highgate, to Andrée, daughter of the late M. L. L. Warenghem and Mme. Warenghem, Becon, Asnieres.
PETRIE—WILLIAMS.—On Oct. 2nd, at Kew Church, A. A. W. Petrie, M.D., to Joyce Victoria, eldest daughter of the late A. E. Williams, Ceylon Civil Service, and Mrs. Williams. Kew, Surrey.

DEATHS.

LOWSON.—On Oct. 8th, Major Charles Stewart Lowson, M.B., C.M., I.M.S. (retd.), of Maybury Mansions, W.
MARRAT.—At a nursing home, Woking (of pneumonia), Constance Muriel (née Willis), M.R.C.S., L.R.C.P., B.S. Lond., in her 30th year. Also Barbara Jean, daughter of the above, aged one day.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED OCT. 2ND, 1926.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 96 (last week 121); scarlet fever, 1715; diphtheria, 1011; enteric fever, 163; pneumonia, 510; puerperal fever, 44; cerebro-spinal fever, 6; acute poliomyelitis, 65; acute polio-encephalitis, 3; encephalitis lethargica, 44; continued fever, 1; dysentery, 10; ophthalmia neonatorum, 140: puerperal pyrexia, 23. There were no cases of cholera, plague, or typhus fever notified during the week. Puerperal pyrexia became a notifiable disease on Oct. 1st and it is now obligatory on the accoucheur to report under this heading any febrile condition occurring in a woman within 21 days after childbirth or miscarriage in which a temperature of 100·4° F. (38° C.) or more has been sustained during a period of 24 hours or has recurred during that period (see THE LANCET, August 21st, p. 404). The 23 cases shown in the return were notified during the first two days of the present month.

Deaths.—In the aggregate of great towns, including London, there were 2 (0) deaths from small-pox, 2 (0) from enteric fever, 5 (0) from measles, 3 (0) from scarlet fever, 25 (4) from whooping-cough, 36 (11) from diphtheria, 246 (63) from diarrhœa and enteritis under 2 years, and 32 (7) from influenza. The figures in parentheses are those for London itself. Two deaths from small-pox were reported, one from South Shields county borough the other from Willesden urban district. The circumstances of the latter were set out at length in our columns last week.

Notes, Comments, and Abstracts

THE PHARMACIST: HIS TRAINING AND VOCATION.*

BY JAMES F. TOCHER, D.SC., F.I.C.,
ANALYST AND LECTURER IN STATISTICS, UNIVERSITY OF ABERDEEN; PEREIRA MEDALLIST OF THE PHARMACEUTICAL SOCIETY.

I WISH in the first place to convey to the President and the Council of the Society my high appreciation of their kindness in inviting me to speak at the opening of this, the 85th session of the School. It is a great honour to me—a dug-out, a pharmaceutical fossil—to be asked to deliver the Inaugural Address, and if, because I am a fossil, or, if you like, a renegade, I expose my character too much, please be good enough to credit me, at any rate, with sincerity and conviction and with a desire to encourage those of you who are on the threshold of your career.

The Pharmacist's Training.

At this time, and in all parts of the kingdom, young men and women have gone from home to study in college, in university, and in school. The subjects are many and varied; the objects can be more readily enumerated. Is it not remarkable that without any evident systematic arrangement or plan the supply of entrants to each profession or craft or business should, generally speaking, meet the demand, and often more than the demand? Is the selection of an occupation a chance affair? Or can we explain how we find ourselves business men or professional men in our particular branch of business or profession? My statistical mind craves for such information, and its absence leads me to speculate. The son often adopts his father's occupation. The son sometimes selects the career his father opposes. The chance remark of a neighbour leads another to his place in the world. A facility or supposed facility to read Latin or to handle figures or to use one's hands may lead many into their respective niches in life. You, the students of 1926 in this school, can you assign the reason or reasons which led you to choose pharmacy as a profession? If students in general were asked to supply this information the collated data would, I suggest, be valuable to the State and be perhaps a means of deflecting many on to paths more suited to them than the paths first selected.

Human Variability.

It is obvious to us all that mankind is variable in physique, in intelligence, in character, and it is also obvious to us that these qualities are inherited. You know the story of the Aberdeen boy who, on a visit to his maiden aunt, shocked her by his wide knowledge of words, certainly not learned within the schoolroom. "My laddie," said she, "who taught you to swear like that? It's terrible." "Ye dinna learn to swear, Auntie—it's a gift," he said. A good ear, a good memory, an attentive mind, and a power of concentration are certainly inherited qualities. So far the boy was right. But he was a believer in brevity of speech. All that was wrong with him was that he had been in bad company. But although we all know that we vary in physique and in ability, do we know what proportion of the population is really able, and can we grade mankind into classes according to ability or the want of it? What a boon it would be to the teaching staff of a school or college if the students came classified according to ascertained intelligence. In the absence of such grading we have to find out the student's grade during the course of his curriculum. The pioneer work carried out by Prof. Karl Pearson at the Galton Laboratory of University College includes among its many practical results of value to the community a description of the nature of the distribution of intelligence and the numbers likely to be found in each grade of ability from a large random selected population. We learn that only a small proportion of any randomly selected population is really able. We learn other important facts, such as that ability is inherited and that the difference between one able man and another is of an average very much greater than the difference between an ordinary representative of the mass and another of his kind. We ordinary individuals have the grim satisfaction of knowing that the State legislates for us and not for the few brilliantly gifted, who can be trusted to look after themselves.

But I do not know that we can look upon the present students of the School of Pharmacy as simply a chance sample from the general population. You have come from all parts and the School of Pharmacy of the Society may attract only the abler of the young men entering the profession. Competition, struggle for existence, is the normal condition of life, the condition which provides the practical tests of ability and application. There must

* An address delivered to the students of the school of the Pharmaceutical Society of Great Britain.

eal effort and enthusiasm on the part of the student, and here must be real guidance on the part of the teaching staff. The School of Pharmacy of the Society has an able and experienced staff with an accomplished head in my friend Prof. Greenish, the genial Dean of the School. The results of the teaching must be gratifying to the Council. Students have now additional advantages accruing to them from the establishment of the Pharmacological Laboratory of which Dr. Burn is the distinguished Director. In Dr. Burn's laboratory the student will be able to study the principles underlying the biological assay of drugs, and he will get a general idea of how a posological table is constructed. What great advantages you, the students of to-day, have over former embryo pharmacists!

Standards and Methods of Teaching.

I am far from maintaining, however, that teaching is always satisfactory in this country. We must accept certain testimony that occasionally there is inefficiency or indifferent instruction. Thus we must assume that the law of distribution of intelligence holds even among professors. There are "duffers" as well as geniuses. The point of view of the student in this connection is interesting. You may have heard of the professor whose qualifications as a sportsman were undoubted, but whose efforts to impart knowledge were the despair of his class. One day while walking along a lone moorland road in the autumn, a young undergraduate noted his professorial friend in a shooting party *en route* for the hills. A sportsman of the party asked the young Scot if he knew the neighbourhood—was there anything about worth shooting. "Oh yes," was the prompt reply, "do you see that man there?" pointing to the professor; "shoot him!" We must look on teaching and examining as necessary evils. Teachers and examiners mitigate or aggravate the evils according to their character, ability, and training.

The curriculum is standardised for all, because the courses of instruction laid down by the Council of the Society embrace the minimum amount of knowledge an individual should possess before he can, as it were, be let loose on the public as a pharmacist. Incapacity must be eliminated. It is the welfare of the public and not the private interest or inclination of the individual which has to be considered by the State.

Progress of Service and Standards of Training and Examination

The minimum training and equipment of the pharmacist have gradually been raised since 1868 to meet the State's development and requirements. For what was suitable in 1868 is entirely unsuitable now. Why? Because of the great developments in the chemical and medical sciences and their application to modern needs. The origins of many diseases have been definitely ascertained, and preventive or curative remedies have followed like sunshine after a storm. If only those terrible fellows, the organic chemists, would stop putting together in all sorts of ways new combinations of carbon, nitrogen, oxygen, hydrogen, and other simple-like substances, we should get a little relief and breathe more freely. The processes are miraculous-looking, but not quite so miraculous as the sudden turning of Lot's wife into a pillar of salt by the simple action on her part of looking behind her on her last journey. You may have heard of the Aberdeenshire boy who was nothing wonderful in this sudden chemical transformation. His anxious look attracted the attention of the Sunday school teacher who had just read the biblical narrative. "What do you think of it?" she asked him. He said: "You know Eppie Maclean; she went up the village street yesterday, and she looked back three times, and then she turned into a public-house." What wonderful language we have!

What is the good, one might say, of knowing about the preparation of chemical substances with long names? Well, take two such simple instances as para-ethoxy-acetanilide and phenyl-dimethyl-isopyrazolone, which as you know under the names of phenacetin and antipyrin, are well known and frequently used by the public. The answer with regard to these two substances is that the public take phenacetin and caffeine in the same way as the more civilised of them take whisky and soda. The pharmacist must know what these substances are, how they are prepared, and whether or not they are free from contamination or adulteration. Take another instance: that of dioxy-diamino-arseno-benzol dihydrochloride. It is named in the recent Therapeutic Substances Act, and the answer with regard to this substance is that it possesses curative properties of a specific character.

ANCOATS HOSPITAL.

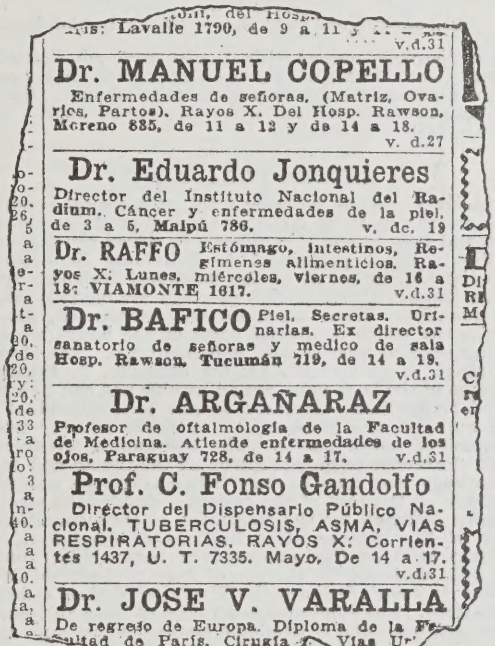
OUR attention has been called to the fact that in the Students' Number of THE LANCET, published on August 28th last, amongst the hospitals of Manchester no mention was made of the Ancoats Hospital. We are glad to note that this institution has 120 beds, with an additional 35 beds at the Convalescent Home at Great Warford, Alderley Edge. The patients treated last year were as follows: In-patients, 1380; out-patients, 8124; accident cases, 21,380. operations numbered 2402.

MEDICAL ADVERTISEMENTS IN THE PRESS.

WE have lately received a short handbook, by Mr. John Nash, called "Advertising as a Science" [1] which is written as a plea for "more accurate and scientific methods in the practice of advertising." Presumably it was sent in the hope that we would commend it as likely to be useful to members of the medical profession, but this we hardly care to do, in spite of the book's merit, for fear of appearing cynical.

Now whilst the majority of doctors in this country object strongly to anything that savours at all of personal advertisement, there are evidently many who look lightly on all cases except the most flagrant, and there is a growing body of opinion (mainly silent) which does not see why medical men should not advertise as much as they wish. Frankly competitive advertising is discouraged by the profession in most parts of the world, but within certain limits advertisement is widely practised. These limits vary in different countries. In England no one takes exception to the issue of directories giving the details of professional achievement, and it is considered permissible to allow names to appear in hospital reports and similar documents with a wide circulation.

A correspondent has sent us a cutting from an Argentine newspaper which illustrates a natural but definite extension of this principle. About one-third of a column is devoted


Dr. MANUEL COPELLO
Enfermedades de señoras. (Matriz, Ovarios, Partos). Rayos X. Del Hosp. Rawson. Moreno 835, de 11 a 12 y de 14 a 18.
v. d.27
Dr. Eduardo Jonquieres
Director del Instituto Nacional del Radium. Cáncer y enfermedades de la piel, de 3 a 5, Maipú 786. v. dc. 19
Dr. RAFFO Estómago, intestinos, Regímenes alimenticios. Rayos X. Lunes, miércoles, viernes, de 16 a 18: VIAMONTE 1617. v.d.31
Dr. BAFICO Piel. Secretas. Urinarias. Ex director sanatorio de señoras y medico de sala Hosp. Rawson. Tucumán 719, de 14 a 19.
v.d.31
Dr. ARGAÑARAZ
Profesor de oftalmologia de la Facultad de Medicina. Atiende enfermedades de los ojos, Paraguay 728, de 14 a 17. v.d.31
Prof. C. Fonso Gandolfo
Director del Dispensario Público Nacional. TUBERCULOSIS, ASMA, VIAS RESPIRATORIAS. RAYOS X. Corrientes 1437, U. T. 7335. Mayo. De 14 a 17.
v.d.31
Dr. JOSE V. VARALLA
De regreso de Europa. Diploma de la Facultad de París. Cirugía ... Vías Ur...

to an advertisement of a British hospital, and besides giving details about the admission of patients this contains a list of the visiting staff, with the telephone number of each. It may be argued that the publicity thus given is no more than a suitable return for the honorary services of these physicians and surgeons, and it is obviously only a concession by foreign doctors to Argentine custom. We reproduce below part of a daily column, headed Profesionales, of the *Nacion*, from which it will be clear that a plain statement of name, address, and specialty is regarded as legitimate advertising by Argentine practitioners. The list does not contain the name of any French, German, or English doctors, who are doubtless placed at a disadvantage by adhering to the customs of their own countries; but it is clear that those who thus bring their names before the public are adopting a convention by which they gain nothing over one another. If the practice were universal it would correspond to a daily publication of the local medical directory; the newspapers or magazines would be the gainers, but the multiplicity of names would largely defeat the object of individuals, for, as W. S. Gilbert remarked, "when everyone is somebody then no one's anybody."

To be really effective an advertisement must not be one of a large number exactly like it, and it is only where the use of newspapers permits a special appeal that it becomes definitely dangerous to the well-being of the profession. A list of names and degrees is defensible, where a list of

[1] London: Nash and Alexander, Ltd., Kingsway House, W.C. Pp. 85. 2*s.* 6*d.*

alleged cures is not. Qualifications and appointments may be verified as facts, but the public has no defence against the advertiser who suggests that he has special skill or qualities which his professional colleagues lack. Nor have these colleagues any redress except counter advertisement. Wholesale competitive self-praise—by all who could afford it—in the columns of our newspapers would certainly decrease the public respect for the profession, whilst the testimonials of grateful patients would be hardly less undignified and misleading. The following extract from a Chinese newspaper, whilst doubtless gratifying to the doctor concerned (who is, we understand, above suspicion of having inspired it) must be a thorn in the side of his medical competitors :—

GRATITUDE TO DR. ——.

Dr. —— —— ——, the former Doctor of the Government Civil Hospital, possesses a great stock of medical knowledge and a rich experience of surgery and healing internal diseases. He has received the degree of Medical Doctor from Hong-Kong University and is always kind and acceptable to whoever approaches him. Last year he had been engaged by the ——— Mining Administration Hospital and within a year effected a great many cures. In the last month I could not eat or drink and became so dangerously sick that many famous doctors could do no help. At last I had the good fortune to be diagnosed by Dr. —— and be healed within half a month. Therefore his benefits to me are too great and I have no other means to thank him than inserting this confession of my gratitude in newspaper thereby to introduce to the public this great efficient Doctor.

CHANG KWEI CHUN,
Chief of the Wood Store of —— Mining Administration.

Even the most ardent individualist must admit that the ingenuity and literary ability of an advertiser (or his agent) are not necessarily a function of his medical skill. How far their unrestrained exercise is for the public benefit is, of course, a matter of opinion.

ZANDER TREATMENT.

FOR many persons suffering from pathological conditions of the motor apparatus ordinary exercise produces too much strain and fatigue, and it is difficult to adjust the amount of exercise in exact proportion to individual requirements. With the aid, however, of the machines designed by Dr. Gustav Zander, of Stockholm, exercises are made a measurable quantity. These machines are constructed, some to exercise the whole or special parts of the body, others to develop selected muscles and muscle-groups. The strength and range of movement, as, for example, in flexion or extension of the knee-joint, are adjustable and can be strictly limited or gradually increased to suit each individual case or, if required, the exercise can be made entirely passive by means of motor power. The well-known physiological effects of exercise or movement on all the tissues and organs of the body can thus be fully utilised without any strain or fatigue on the part of the patient. Besides the machines specially designed for the treatment of such conditions as atony of the muscles after fracture or operation, other machines such as the motor-driven horse-riding machine have been designed for the use of busy professional or city workers to counterbalance the ill-effects of their sedentary occupations. The apparatus is installed at Bath and many of the foreign spas and is available under medical supervision at the Zander Institutes in London (6, Mandeville-place, W. 1), and Sheffield (Edgar Allen Institute). The Anglo-Hungarian Corporation, Ltd. (7, Prince's-street, Westminster, S.W. 1), is the agent for the British Empire of the manufacturers, Rossel Schwarz and Co., Wiesbaden.

A METHOD OF BOOKKEEPING FOR DOCTORS.

A SIMPLE system of bookkeeping which would enable the busy practitioner to keep such a complete record of his income and expenditure as would help him to prepare his income-tax returns without further effort would certainly be appreciated. Mr. A. P. Bertwistle has attempted to devise such a system in "The Doctor's Books" (London: John Bale, Sons and Danielsson, Ltd. Pp. 32. 1s. 6d.). The method outlined involves the maintenance of five books, three—day-book, case-book, and visiting-book—being in daily and two—cash-book and ledger—in weekly use. As the author points out, a system of bookkeeping suitable for the practitioner should be easy to understand and easy to run. We are not sure that the method elaborated by him falls into the last-named category, but probably, in time, the use of these records would become almost automatic. It would have been easier to understand if the second paragraph under the heading "Cash-book" on p. 17 had been carefully revised in proof; in the third line of this paragraph the word "cash-book" should presumably read "ledger and day-book." Mr. Bertwistle has evidently been at pains to provide a workable scheme to assist the doctor in fulfilling what is usually regarded as the most irksome of his obligations, and those who are dissatisfied with their present routine should study his suggestions.

MEASUREMENT OF ULTRA-VIOLET DOSAGE.

WE have received a brochure from Messrs. Arnold and Sons (John Bell and Croyden, Ltd.) on the measurement of ultra-violet dosage. They state that the clinical requirements are met by the use of Levy-West ultra-violet pastilles, which consist of small discs of thin card coated with a preparation on one side sensitive to ultra-violet rays, and on the other (the black side) with an adhesive which will allow the pastille to be put on the patient's skin and to adhere slightly to it. These pastilles change in tint when exposed to ultra-violet radiation and the scale of tints provided extends from 1–12 units of dose. It is stated that the pastilles respond equally well to all wave-lengths between 2300 and 3800 A.U., and that they are quite insensitive to any other wave-lengths. This is not evident from the illustration accompanying the article as the photograph is cut short at this latter wave-length—a point which bears emphasis because of the inevitable exposure to light of the pastilles during ordinary daylight use.

RELAXATION.

IN the stress of modern civilised life the ability to relax upon occasions is a valuable possession, and in a recent little book on popular health (Byways to Health. By Thomas D. Wood, A.M., M.D., and Theresa Dansdill, A.M. London and New York: Appleton and Co. 1925. Pp. 198. 5s.) a large proportion of the subject matter is devoted to relaxation. The authors quote Mr. Kipling's "Maltese Cat," the polo pony who "hung down his head and let all his muscles go slack," to get all the rest possible before the closing phase of the game. They also quote Victor Hugo, George Eliot, Napoleon and Kleinas, the Pythagorean philosopher, in the course of a couple of entertaining pages, and in this breezy way the reader is whisked through a sound book on health in a short and agreeable time. On the subject of cooking a pleasant story is told about a young reporter who wrote of a murder that "the poor woman was killed while cooking her husband's breakfast in a most shocking manner," to which was added in editorial comment "there are many women who cook their husband's breakfasts in a most shocking manner, but it is seldom that justice overtakes them so summarily."

CONTEMPORARY ENGLISH WATER-COLOURS.

MEDICAL men interested in water-colour painting—and we have reason to know that they are numerous—will find a visit to the St. George's Gallery, 32A, George-street, Hanover-square, repay them. Although there are only 70 exhibits, much of the work is by well-known painters possessing differing outlooks and practising different methods. He would be a catholic-minded person who could admire everything on the walls and a depreciator who could not find something to admire very much. The large range of the little collection proves that contemporary English water colourists are tied by no rules of any sort as to what should be tried for or how the effort should be made. In other fields than painting this is the spirit which leads to developments and secures enthusiastic followers; and so it is to-day with the most typically English branch of art.

SUSSEX PROVIDENT SCHEMES.

THE Sussex provident scheme was founded in Brighton in 1921 by the late Dr. J. F. Gordon Dill, and figures published from time to time in THE LANCET have indicated its success. In 1925 nearly £6400 was paid to the various hospitals in Brighton and district for medical services rendered to subscribers.

A scheme on similar lines to the Sussex Provident Scheme has just been launched in West Sussex under the title of the Royal West Sussex and Associated Hospitals' Contributory Fund. The new organisation has not yet been fully developed, but it is hoped that it will cover an area extending as far east as Worthing; this town may or may not be included. The general committee, it is proposed, shall comprise eight members of the board of management of the Royal West Sussex Hospital at Chichester, three representatives from the associated hospitals, two from the nursing associations, one from the doctors, and one from each group of 50 subscribers. Although at present in its very early days, the West Sussex branch of the Provident Scheme is making rapid progress; it is realised that it offers hospital treatment to subscribers as a right and not as charity.

In four years ended Dec. 31st, 1925, the Sussex Provident Scheme enabled 1843 members in Brighton to obtain free in-patient treatment for 36,681 days, and 5874 members to obtain free special out-patient treatment for 30,94 attendances; £16,164 was paid to hospitals for maintenance and treatment of members. In four years the Brighton district membership has been just over 30,000.

Harveian Oration

ON THE

DEBT OF MEDICINE TO THE EXPERIMENTAL METHOD OF HARVEY.

Delivered before the Royal College of Physicians of London on Oct. 18th

BY SIR JOHN ROSE BRADFORD, K.C.M.G., M.D., D.Sc. LOND., F.R.S.,

PRESIDENT OF THE COLLEGE AND CONSULTING PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL.

SIR HUMPHRY ROLLESTON AND FELLOWS OF THE COLLEGE,—I have, as a first duty, to tender to you, Sir, my thanks for entrusting to me the honourable office of delivering, in accordance with the wishes of Harvey, the annual oration commemorating the benefactors of this College. It is a striking tribute to the greatness of Harvey that, notwithstanding the lapse of time and notwithstanding the great benefactions received by this College from other pious founders from remote to very recent times, this oration has become more and more a tribute to the unparalleled services rendered by William Harvey not merely to this College but to mankind. This great result is, no doubt, in part dependent upon the greatness and brilliance of Harvey's discoveries as to the existence of the circulation, and the unravelling of some of the mystery surrounding the heart-beat, but it is due still more to the great conceptions he formed as to the proper methods to follow in attempting to understand the facts of Nature. It is probable that it is no exaggeration to say that the greatest and the most valuable benefaction this College has ever received, is Harvey's exhortation to the Fellows and Members of the College to search and study out the secrets of Nature by way of experiment, coupled with the example afforded by his own life's work.

Harvey, like most great men, was of so modest a character that he had little idea of the great place he himself would occupy in the history of science, and this exhortation of his, together with his desire that the Fellows of his beloved College should continue in mutual love and affection amongst themselves, was doubtless only an expression of his wishes for the successful development of this College, and thus indirectly of medicine as a whole.

THE GREATNESS OF HARVEY.

Successive Harveian orators during the last 200 years have striven to honour his memory and his services, in a series of orations dealing with different aspects of his life and work, or with the progress of scientific knowledge since his day, and the influence of this on mankind and on civilisation. Scholars have brought before us the state of medical knowledge in his time, and have also vividly portrayed the mode of his life and the conditions under which he worked. We know, thanks to their labours, what manner of man he was, and what was the influence on him of the disturbed time in which he lived. These are matters of perennial interest, and his example of philosophic calm under conditions of great national anxiety cannot fail to be an example to all for all time.

Harvey's life-work illustrates, in a remarkable manner, the many-sided character of medicine when considered as a whole, and how the men who promote its advance are often men of wide attainments in many branches of knowledge. His greatness is shown by the fact that, notwithstanding the conditions prevalent in his time, he was able to so free himself from the traditions of the past and the influence of authority and dogma, as to lay the foundations of modern science by his insistence on the fundamental importance of experiment and of accuracy of observation. Different sciences afford different opportunities for the use of experiment as a means of discovery, but the founder of the science of physiology had, in his field of study, unlimited scope for this method of advance, as prior to Harvey but little had really been effected by experiment, although it had been used by many, even in ancient times. We reverence Harvey not only for the foundation of physiology as a science and for showing how its progress is to be effected, but, as Fellows of this College of Physicians, for making plain the intimate relationship which must exist between medicine, both as a science and as an art, and physiology. Harvey combined in himself the physician and the physiologist. This, with the lapse of time and the progress of knowledge, has become increasingly difficult, and this difficulty is one common, to a greater or less extent, to all branches of knowledge, but more especially when a field of work includes a science and an art. There is some danger of a catastrophe akin to that of the Tower of Babel involving the more narrow specialists of these later days, owing to the rapid development of the new languages required to describe the results achieved in some departments of knowledge.

THE FOUNDATION OF MEDICINE ON PHYSIOLOGY.

Although the great developments of knowledge make it more and more difficult for any one individual to have anything approaching complete and detailed information even in one branch, and still more so in more than one, yet there should be, on the other hand, less difficulty in acquiring a fuller grasp of fundamental principles. After all, the magnitude of any scientific discovery is to be measured rather by its influence on the genesis of these fundamental principles, often formulated as so-called laws, than on the mere solution of the particular problem investigated. The so-called physical sciences have had in the past an advantage in this respect over the biological, in that the mathematician, the astronomer, the physicist, and the chemist have had more in common than the morphologist, the physiologist, and the pathologist. But the progress of knowledge is gradually effecting a change in this respect, and it is becoming more and more easy for the followers of the different sides of biology to meet on common ground. It is not only becoming increasingly difficult to draw a hard-and-fast line between the problems investigated by the physiologist and those of the pathologist, but even the morphologist, whether zoological or botanical, is now pursuing with zeal purely physiological methods in order to further his science, even on its morphological side. Harvey, as a physiologist, would have rejoiced at these developments if he had known that the colour of an animal, and even its form and mass, to say nothing of its sex, were under the influence of, and capable of being modified by, the functional activity of certain glands.

Harvey was, as just stated, a physiologist and a physician who practised his profession, and was daily face to face with urgent and distressing problems, as we all are. We all agree that our improved methods of coping with these problems are ultimately dependent upon his great discovery; and it is a trite observation that medicine must be founded on physiology, and that the study of healthy processes must precede that of morbid ones.

Observation and Experiment.

But the debt of the art of medicine to the science of physiology is greater than this, and the value of physiology to medicine is not to be measured merely by the direct practical utility, great as it may be and has been, of individual physiological discoveries, even when these are, like Harvey's, of a truly epoch-making character. The art of medicine must of necessity be reared as a superstructure on the science of medicine unless it is to be indistinguishable from mere empiricism; and the science of medicine, like other sciences, can only be advanced by observation and by experiment. When we reflect on what has

been done in the past by the observation of our predecessors, from the most remote to recent times, we cannot fail to record our admiration of the great intellectual qualities that these observers must have possessed to have enabled them to achieve the results obtained. The knowledge of the natural history of disease is a subject of vast importance to the art of medicine, and one that can only be acquired by observation. Nevertheless, as the late Lord Moulton has well said, when we are reduced to observation science crawls. If we are to treat a disease successfully we must know a great deal more about it than its natural history—i.e., its course when it is allowed to pursue its career unchecked. Experiment as a method of furthering the progress of any given science is capable of achieving great results, and—again to quote Lord Moulton—"As soon as you can bring experiment to bear upon a subject you are free, but as long as you can merely observe, your progress is slow. The reason is that experiment is like cross-examination: you can put the question you want, and Nature always answers it."

Experiment, however, is not equally applicable to all sciences, and from the circumstances it is obvious that in medicine its scope must necessarily be limited. This is, doubtless, one of the reasons why the progress of the science of medicine has been slower than we could wish, but another is to be found in the profound complexity of the problems that have to be solved. This complexity is not only obvious in the consideration of broad general questions, such as the nature and causes of disease, or of individual diseases, but applies often to our daily work of the mere recognition of the nature of the malady in an individual patient. We are often baffled by the complexity of this, and nothing is more common in the experience of practitioners of our art than to find suddenly that what seems simple and obvious is by no means so. The complexity of the problems daily before us is apt to react on the mind of the physician and produce, even in this rather materialistic age, a tendency to regard the phenomena of life, and especially of disease, in an individual, as scarcely subject to the same rigid laws of cause and effect that we all recognise as binding in the physical world. If this belief, even in a modified and attenuated form, is once entertained, it causes a looseness of thought that is most inimical to the real progress of knowledge in medicine; and it is here that the study of physiology and the work of Harvey have rendered the greatest service to medicine. Harvey, by experimental work, by clear thinking, and by accurate observation, laid the foundations of physiology as a science, and those who have followed in his path have continually added to his foundations, so that now no one questions its right to rank as a science, and no one disputes the fundamental proposition that in physiology, as in physics, like causes produce like results. If the excitation of the vagus nerve causes stoppage of the beat of the heart in one case, and acceleration in another, or possibly in the same animal at another time, it is not, as Majendie thought, due to the variability of vital phenomena as such, but is due, as Bernard, the great exponent of "determinisme," taught, to the conditions not being really the same. It is perhaps superfluous to mention such an attitude of mind as regards physiology, but perhaps, even now, we are not altogether free from such a way of looking at things in human medicine, and Majendie's way of thinking has, perhaps, some followers. It is, of course, much more simple to render the conditions the same in physiological observations than in medicine, although even in physiology it is often difficult, as the discordant results of many competent observers show. In human medicine the difficulties are infinitely greater, and hence we should regard the results already achieved as a most remarkable monument to the acumen of clinicians, who must, in order to have obtained the results we are familiar with, have been possessed of exceptionally sound scientific methods of observation.

The Conditions of Progress.

The history of the progress of our knowledge of medicine affords countless instances of the extreme accuracy of observation possessed by the foremost clinicians of the day, but although their observations were often excellent and their descriptions leave little to be added to, their explanations of the observed facts were not of the same value. Variations observed in the course of maladies were often explained in an artificial and non-scientific manner, owing to the want of appreciation of this law that like causes produce like results, and that if the results are different in apparently similar cases, the real explanation is not some variability on the part of Nature, but that in reality, although the cases seem similar, there is some hitherto undiscovered difference. One type of thinking closes the door to further work and real progress; the other is one of the most fertile causes of discovery. Shrewd clinicians observed, long ago, that some cases of typhoid fever lasted four weeks, others were said to abort in two weeks; hence it was inevitable that a certain vagueness and uncertainty of belief should be entertained with regard to the action of the virus of this disease; and it is difficult not to think that such beliefs react on the mind and influence profoundly our outlook on problems that beset us, and on our methods of coping with them. The progress of inquiry shows that the differences in the duration of the febrile period of typhoid fever are, at any rate sometimes, due to the differences in the organisms causing the disease, and we now talk of the enteric group, including both typhoid and paratyphoid bacilli. It is quite true that this increase of knowledge does not settle the problem, as there still remains the question of the relation and origin of the paratyphoid group of organisms; but this progress of knowledge has had the effect of demonstrating that the duration of so-called typhoid fever is not a matter, so to speak, of chance, but depends—or may depend—on the specific nature of the organism causing the illness. The fact that one organism causes an illness of four weeks' duration, and another, quite distinct but allied one, causes an illness of two weeks' duration, is a very different matter, from the point of view of scientific medicine, than the statement that the illness of typhoid fever may last either four weeks or two weeks. The attitude of mind caused by one belief is calculated to cause a certain bewilderment of feeling and one both of hopelessness and helplessness of arriving at any definite attainment; the other encourages the inquirer that long-continued patient work may reveal, at any rate in part, the mystery, and show that the phenomena of disease, complex as they are, are nevertheless amenable to the same laws and conditions as those governing the biological and physical worlds. Further, the apparent variability of disease becomes, instead of an impediment, a spur to further inquiry, and a stimulus to research, and such inquiries are often rewarded by discoveries that add a definiteness to our knowledge that is of the greatest possible value. It would not have been possible for this attitude of mind to be developed in relation to the problems of medicine unless the study of physiology and of vital processes generally had been placed on the surest foundations by Harvey by the use of the experimental method, as it is this method, in its many developments, that has enabled us to see that in living things like causes produce like results, and that the exceptions are apparent only, not real.

The Debt of Medicine to Experimental Physiology.

Further, in the past there has been much theorising, both in physiology and in medicine, often on very insufficient data. The experimental method has afforded a very certain and conclusive test of the inaccuracy of much work of this nature, and such results, important as they are, are, nevertheless, of a negative character, and have sometimes led to the belief that there is some antagonism between experimental inquiry on the one hand and the result of

observational methods on the other. Doubtless much loose thinking and many erroneous deductions may occur as the result of the direct and immediate transference of experimental animal results to the explanation of the phenomena of human disease, but this, again, arises from neglect of the fundamental principle that the conditions in the two cases are not alike, and also that we constantly think the phenomena of disease to be much simpler than they really are, and are perpetually hankering after cut-and-dried explanations of what are, in reality, exceedingly complex phenomena. Far be it from me to minimise the direct and immediate gains to medical knowledge and to medical practice that have resulted from individual discoveries in experimental physiology, as, for example, the notable discoveries as to the functions of the thyroid and its secretion, and many others. Harveian orators have dealt with these in such an able fashion that it is superfluous to dwell on them, and I would urge to-day that perhaps of even greater importance is what I may call the general effect on medicine of the development of physiology as an exact science, and the influence that this will have, in the course of time, in making the science of medicine as exact and as worthy to be deemed a science as any other branch of natural knowledge. Clinical observation, when carried out by a great mind and in strict accordance with scientific method, has achieved most striking results, results which are entitled to our highest admiration when, as already stated, we consider the extreme difficulty of the problems and the scanty means at our command to solve them. Often, however, the results, great as they are and accurate as they are, lack the precision of detail that sometimes the experimental method is capable of supplying, and then the experimental method is responsible for the completion of that which has been truly founded by clinical observation.

Hughlings Jackson and Cerebral Localisation.

A striking illustration of this is afforded by the history of the discovery of what is known, shortly, as localisation of function in the cerebral cortex. Here the fundamental work was done by that great clinician and profound thinker, Hughlings Jackson; and when we reflect that by the study of a very limited number of cases of hemiplegia and of a series of cases of fits, and by the careful correlation of the phenomena observed during life with the lesions found after death, he was able to arrive at the conclusion that voluntary movements were represented in a certain area of the cortex, we have a magnificent example of the accurate and far-reaching deductions that may be drawn by a master-mind. Nevertheless, even in such a case as this, the subsequent experimental work was able to give a precision and supply a mass of detail that greatly enhanced the original fundamental discovery. So much is this the case that many came to think that cerebral localisation had been discovered solely by the experimental method, whereas the fundamental facts were really the outcome of clinical observation.

The greatness of Jackson's conceptions is well seen in the fact that he recognised that cortical localisation was concerned with the representation of movements and not of muscles, and, indeed, with a special kind of movement—namely, voluntary movement. In the earlier days of experimental work on this subject some confusion was introduced by certain observers falling into the error of looking for so-called centres for the representation of muscles, and it was only later that inhibition of antagonistic muscles, as well as contraction of other muscles, was also recognised as a matter of cortical representation. Anyone who has actually seen the movements called forth by the electrical excitation of the cerebral cortex will experience quite different mental impressions from those he will have felt by watching an epileptiform seizure, perhaps confirmed subsequently by seeing the position and nature of the lesion responsible for it. In the one case there is a definiteness and certainty that in the other is apt to be replaced, at the best, by a feeling of high probability. And yet, if we are to succeed in our endeavours to cope with the facts of Nature, we must aim at possessing certain and not probable knowledge. It may be that this is often, in our work at present, unattainable, but it is the great thing to aim for in all our work. Perhaps some of our mistakes in the practice of our art arise from not clearly differentiating between what we really know and what is only probable; and sometimes, perhaps, we speak with an apparent certainty about matters that are not, in our present state of knowledge, really as certain as we would like them to be. The touchstone of the experimental method of Harvey is a useful corrective whenever and wherever it may be applied to questions of this nature. The modern physiology of the central nervous system, investigated by the experimental method, affords a striking example of the extraordinary precision of knowledge that may be obtained by the use of this method, and, thanks to it, a flood of light has been thrown on the complex problems of the mechanisms involved in posture, equilibration, coördination of movement, and perhaps on the still more complex mechanisms associated with the highest functions of the brain. Nevertheless, in an oration associated with the name of Harvey it may perhaps be possible to illustrate the principles of the profound influence exerted by experimental physiology on medicine by seeking an example in that branch of physiology so closely associated with Harvey—namely, the beat of the heart.

The Experimental Method of Harvey applied to the Heart-beat.

I am not so much concerned to-day with giving a record of individually important discoveries that have been made from time to time whereby our knowledge has been increased and our power of recognising, and treating with some success, individual diseases, has been extended; but, rather, with the nature of the conceptions we form of the phenomena of heart disease as we see them clinically in the light of the exact modern physiology of the heart, as revealed by the use of the experimental method of Harvey.

The beat of the heart, from the earliest times to the present, has been looked upon as emblematic of life by poets, philosophers, and thinkers, and has always had an element of mystery and awe attached to it. No physician will deny that in disease there is much of apparent mystery in what may be called the natural history, or, if you will, the clinical course, of heart disease; further, that the clinical picture presented by individual cases, even where relatively simple lesions are present, is one with much individual variety, that the phenomena are complex and difficult to analyse, and hence there has been much uncertainty of opinion, both in diagnosis and in treatment. Such differences of opinion existed not only with reference to questions of interpretation or explanation, but even in reference to what we should now regard as mere questions of fact. There must be some present here to-day who will remember a controversy as to the actual time of occurrence of certain well-known murmurs associated with a common valvular disease. When the methods available for clinical observation led to such remarkable differences of opinion amongst physicians of recognised skill and ability, it is not strange that many keen and able minds should have felt that the problems of medicine were so difficult and so complex that it was beyond their power to really solve them with the means at their disposal; and this attitude of mind is one very inimical to the progress of our science and our art. The method of Harvey of seeking the secrets of Nature by way of experiment shed a flood of light on the problems that had baffled those who confined their methods to observation. Not only was this the case, but what is of supreme importance to recognise is the fact that many of the men who in recent times remodelled our conception of the nature of cardiac disease by the fundamental character of their discoveries of the

nature of the cardiac beat, were men who devoted their lives to the investigation of the facts of Nature with no other object in view than that of adding to knowledge for its own sake. Great as their discoveries were, they had no idea of their practical bearing on heart disease, and some of them, indeed, were men who had no knowledge of heart disease as such, and never undertook their work with any idea of adding to our knowledge of heart disease. Further, the discoveries of the pure clinicians, remarkable as they were for the acuteness of their observation, were largely dependent on making use of the methods and apparatus of the laboratory in the investigation of clinical problems. The polygraph and the electrocardiogram gave certain and accurate information where previously other methods of observation had led only to the dissemination of views, explanations, and theories of varying degrees of probability. It is one thing to be able to actually demonstrate beyond cavil that the auricle of the human heart in a living patient is in the state known to us as that of fibrillation, and another to talk of lack or failure of compensation, with no clear mental picture of the meaning of the words used. Anyone who has seen a fibrillating auricle in the living animal in the laboratory has a mental picture that is not easily forgotten, a picture of a singularly concrete and definite character, with an element of reality about it that cannot fail to be a useful reminder to him when he stands at the bedside of a patient suffering from the effects of this condition. It is, of course, quite true that the acute clinical observers of the past had recognised the clinical picture produced by this condition, and had described quite accurately some of its manifestations. We can but admire their acumen, but they were necessarily unable, owing to the lack of physiological knowledge and the want of adequate methods, to determine the true cause of the symptoms, and to correlate the lesion with its results. Hence the inevitable temptation, to some minds, to speculate and theorise vaguely instead of confining themselves to mere observation, and hence the further elaboration of more and more speculation and ultimately much confusion as to what was speculation and what was firmly established by observation. This has often been most harmful to the real progress of medicine, owing to the development of loose methods of reasoning, and the frequent impossibility of bringing the matter in dispute to a decision by the crucial method of experiment.

The Experimental Study of Auricular Fibrillation.

The history of the development of our knowledge of fibrillation is singularly interesting as affording a striking example of the experimental method having substituted a clear, definite, and easily proved condition for what was previously a most vague, indefinite, and even intangible conception. But the history of the discovery of fibrillation is even more interesting and important from another point of view, and teaches a lesson of supreme importance to those who are always insistent on investigation being directed to some immediate practical aim. Fibrillation was discovered by a physiologist who was attempting to ascertain where the beat of the heart had its origin—in other words, whether the heart contained a so-called centre from which the beat arose. In the course of his inquiries he found that on stabbing the heart with a fine needle a condition of what we now call "fibrillation" ensued. Sometimes this followed a single puncture, sometimes many were required. Later it was found that faradisation of the exposed heart with a current of moderate intensity produced the same result. Sometimes the condition of fibrillation was transitory, in other cases it was permanent; the heart did not recover, and death ensued.

It is unnecessary to-day to go into all the details of the many subsequent investigations on this interesting subject; all that it is necessary to point out here to-day is that this condition of fibrillation was a discovery of experiment produced by such crude and simple methods as repeatedly stabbing or faradising the exposed heart. I can well remember that it was a common method, some 40 years ago, to kill an animal at the end of a physiological experiment by faradising its heart, and so producing heart delirium or fibrillation. No one who saw fibrillation would have suspected that it was a common condition in human heart disease, and that almost every hospital ward had cases suffering from it, either temporarily or even for long periods of time. It might, indeed, have been argued very plausibly that it was inconceivable that such crude experiments could have any possible use or bearing on vital processes, and still less on human heart disease; and yet we see that the exact opposite is the case, and that, crude as the experiment was and remote as was the connexion between the normal dog's heart and human mitral stenosis, and although the mind of the investigator had no thought of heart disease in his inquiry, nevertheless this crude and apparently idle experiment was of the utmost significance for the intelligent understanding of one of the commonest forms of heart disease.

THE RECIPROCAL RELATIONS OF PHYSIOLOGY AND PATHOLOGY.

Another lesson may also be learned from consideration of these results, and that is the reciprocal influence of physiology on pathology, and of pathology on physiology, and how extremely artificial the boundary is between these two departments of knowledge, and how, if we are to have an adequate conception of even relatively simple vital processes, it is necessary to study them with the broadest possible outlook. A pure and rigid physiologist, studying only the normal activity of the heart, would scarcely be prepared to admit that the circulation, in a highly organised mammal, could be maintained when the rhythmical activity of the heart was so disorganised that auricular fibrillation was present. Nevertheless, clinical medicine proves that, even in man, such is the case. Surely such facts as these are of the utmost value, not only in our immediate daily work and in our attempts to treat disease and relieve suffering, but still more so in our appreciation of the nature, the complexity and, more especially, the adaptability of the activities of living matter. Marvellous as are the various methods by which a circulation sufficient for the needs of the normal animal is effected—and this is well shown by the study of comparative anatomy and comparative physiology—the marvels of the relative efficiency of the disordered circulations of heart disease are not any less. Certainly the study of these conditions not only widens our conceptions, but is also a useful incentive to our therapeutic efforts when a more limited and narrow belief might lead us to be less hopeful as to the possibility of procuring relief or cure in these conditions.

The Work of Gaskell and Romanes.

The history of the study of the phenomena of fibrillation has been cited as an illustration of the very close relationship that exists between experimental science and the daily work of the physician, especially if we wish to found our art on a secure basis of science and if we desire to eschew empiricism where this is possible. The same illustration may be found equally well in the history of the development of our knowledge as to the nature of the normal beat of the heart and of its disordered action in disease. Here also we see the extraordinarily close connexion between pure physiology on the one hand and the interpretation of the clinical symptoms of heart disease on the other. It may seem at first strange to assert that our present conceptions of the fundamental facts in the pathology of heart disease owe their origin to researches conducted by a physiologist on the nature of the muscular contractions in the umbrella of the jelly-fish, but it is really an unexaggerated and plain statement of fact. Romanes, in the 'seventies, carried out a series of very beautiful but very simple experiments on the nature of the

rhythmical contractions of the umbrella of jelly-fish, being especially interested in the question whether the wave of contraction was transmitted via the nerve plexus—that intermingles with the sheet of muscle in these organisms—or whether it was of purely muscular origin. He had but little apparatus beyond a pair of scissors, and, for some purposes, a simple recording lever and a smoked surface. Romanes, in the course of his work, discovered the fundamental fact that what is known as a block was a phenomenon dependent purely upon muscular changes, and due sometimes to a mere narrowing by section of the width of the muscular bridge connecting the two portions of a contracting muscular sheet. In other words, a block might be produced by local alterations in the conducting properties of the muscle itself. Further, he showed that delay in conduction could also be effected by such alterations in the muscular bridge produced by narrowing of the connexion, and that delay in transmission of a muscular wave from one part to another was not in itself any evidence of the intervention of the nervous elements. The importance to us, as physicians, of Romanes's work was that it was the origin of the slightly later and epoch-making work of Gaskell on the nature of cardiac action. We owe to Gaskell a very large part of our modern conceptions of the physiology and pathology of the heart muscle, and Gaskell's work, like that of Romanes, is beautiful in the extreme simplicity of the bulk of his experimental work. He developed and amplified in the heart of fishes, of amphibia, and of reptiles, and especially in the heart of the tortoise, the fundamental experiments of Romanes; and, like Romanes, some of his most striking results were obtained by the use of experiment, with little more apparatus than a pair of sharp scissors. His fundamental experiment of producing a block by section of the muscle of the auricle, so as to leave only a narrow bridge connecting the sinus portion of the auricle with the ventricular portion, was performed on the heart of a skate on the deck of a yacht whilst cruising off the west coast of Scotland, not far from where Romanes worked in his seaside laboratory on his jelly-fish.

Gaskell was the protagonist of the doctrine of looking upon the heart as a muscle and of unravelling the properties of cardiac muscle, and of correlating them with those of other muscular tissues, voluntary and involuntary. Further, he correlated structure and function, as shown by the different physiological properties of auricular and ventricular muscle associated with their different structure, and he emphasised, as also did Roy, the great part played by the auricle in the physiology of the heart-beat and its intimate association with the nervous system.

Another of Gaskell's great conceptions was that of the independent rhythm of the separate cavities of the heart and the way in which, under certain abnormal conditions, the prepotency of the sinus end of the heart might be interfered with, and an independent rhythm initiated in some other portion of the heart, as, for example, the ventricles. We owe to him the conception of the heart as consisting of a number of muscular cavities each with an independent rhythm, but the whole dominated by a prepotency at the sinus end. Nevertheless, under certain conditions this might be disturbed by the manifestation of the independent rhythm of some other portion of the heart, more especially the ventricle.

Gaskell's work on the nervous system was of such a striking character, and led to such far-reaching conclusions, that sometimes we are apt to forget that his earlier work on cardiac muscle was certainly of equal importance, and has had a very great influence on the progress of modern pathological knowledge, especially by clarifying our ideas as to the nature and mode of origin of the cardiac rhythm. We also owe to him and to Roy the conception that the main function of the auricle is to act as a regulator of cardiac activity. As has already been pointed out, all these fundamental facts were discovered by experiment, with very simple apparatus. But in another branch of physiology to which medicine is also greatly indebted the experimental methods necessary in order to elucidate the phenomena were of a more complex character. Forty years ago electrophysiology was looked upon by many as a recondite branch of investigation which might perhaps be of interest, but which could not possibly be of any practical use. Physiologists, like Burdon Sanderson, were engaged in the investigation of the electrical phenomena associated with the activity of vital processes, simply and solely because it was the most delicate physical method available for the investigation of such phenomena. It is a striking comment on such views as these to reflect that the study of the electrocardiogram in the human subject and in animals was the actual means by which the condition of fibrillation was verified to exist in the human subject. Furthermore, the electrocardiogram gives us the most definite and accurate knowledge of the real state of the cardiac muscle, as shown by the nature of its activity.

The Electrocardiograph.

One of the most striking everyday illustrations of this may perhaps be quoted. Every practitioner is aware that in mitral stenosis under some conditions the presystolic murmur is absent and in others it is present. I know of no more striking demonstration than to be able to show, by means of the electrocardiogram, that in the one case the auricle is contracting rhythmically and in the other it is not. The electrocardiogram removes all doubts and difficulties as to the interpretation of this phenomenon, and gives an element of certainty that is not obtainable by any other method. It has thus led to a precision in the interpretation of some clinical phenomena that leaves little to be desired. On the other hand, it requires an elaborate installation and a considerable amount of technical and special knowledge, and thus is ill-adapted for ordinary routine observation.

Although we owe to the electrocardiogram the complete demonstration of the existence of fibrillation in the human heart, we can recognise the presence of fibrillation by other and simpler methods. It is a common thing in the history of science that the interpretation of facts may require difficult and elaborate experimentation, whilst their recognition can be effected by the use of simpler methods. The electrocardiogram may be useful for both purposes, but it is perhaps more especially valuable as an instrument of research when attempts are being made to ascertain the fundamental causes of certain clinical phenomena.

The Work of Ringer.

Another striking illustration of the profound influence of a simple experimental method of inquiry in advancing our knowledge of the nature of the heart-beat, and indirectly of all vital activities, is afforded by Ringer's work on the effect of minute quantities of calcium, potassium, &c., on the heart. His discovery that the activity of a living tissue was dependent upon the presence of calcium was a great discovery, and one the full effects of which are only now beginning to be realised. He, further, had the very remarkable foresight to anticipate in some respects the modern doctrine of ions. Ringer's work is perhaps especially noteworthy inasmuch as it was the work of a man trained as a clinical physician, who did not embark on experimental inquiries until he had reached middle life, and then devoted himself to the investigation of what might be regarded as abstract problems of pure physiology. These observations, like those of Gaskell, were what may be called fundamental, inasmuch as they altered our conceptions of the nature of vital processes, in that they replaced what was vague and indefinite by concrete physical and chemical facts. These observers certainly fulfilled Harvey's exhortation to the letter, by

searching and studying out the secrets of Nature by way of experiment.

I have attempted, in this oration, to show that the pursuit of knowledge by Harvey's experimental method is not to be regarded only as a means for the acquisition of results of great value in our daily work, but also that it is of supreme importance in laying the foundations of our conceptions as to the nature of the processes we see at work in disease, and that, thanks largely to it, we may claim that medicine has a scientific status as a branch of natural knowledge.

Hence in medicine, as in biology generally, it is true that like causes produce like results, and the successful investigator must realise the profound truth of the lines :—

> And Nature the old nurse took
> The child upon her knee.
> Saying, ' Here is a story book
> Thy Father has written for thee.
>
> Come wander with me,' she said,
> ' Into regions yet untrod,
> And read what is still unread
> In the manuscripts of God.'
>
> And whenever the way seemed long,
> Or his heart began to fail,
> She would sing a more wonderful song,
> Or tell a more marvellous tale.

An Address

ON

WORKMAN'S COMPENSATION AND THE SURGEON.

Presidential Address delivered at the Section of Surgery, Royal Society of Medicine on Oct. 20th, 1926,

BY V. WARREN LOW, C.B., M.D. LOND., F.R.C.S. ENG.,

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As far back as 1846, the year in which Lord Campbell's Fatal Accidents Act was passed (which gives the right of action for compensation to the families of persons who are killed by the negligence of others), a Select Committee on Railway Labourers, shocked by the casualties among the 200,000 navvies engaged in the work of railway construction, reported in favour of making railway companies pay compensation for accidents. The words were :—

" By making the companies liable instead, your Committee contemplates fixing that part with the liability who has the greatest power to prevent the injury and the greatest means to repair it."

That was in 1846, and it was not until 1880, and then only tentatively, that steps were taken by our legislators to give effect to this very salutary suggestion.

I have heard it suggested, even in the precincts of St. Stephens, that surgeons are apt to err on the side of caution and reaction, particularly with regard to certain manipulative methods, but I think I can claim that the surgical world moves more rapidly than this.

In 1880 was passed the Employers Liability Act. Before this date the only legal remedy open to the workman who had suffered bodily injury, when following his employment, was a common law action against his employer. Such an action is only available when it can be shown that the personal injury complained of arose from the employer's personal negligence, or because he knowingly employed an incompetent servant. Even then the plaintiff may have to meet the defence of *volenti non fit injuria*, a doctrine which deprives a servant of the right to recover damages for personal injury, if, appreciating the risk he is running, he agrees expressly or by implication to accept that risk. Furthermore, a counter charge of " contributory negligence "—i.e., want of ordinary care on his own part—may, if substantiated, deprive a workman of success in the action.

Even if the plaintiff successfully overcomes these two methods of defence there remains the even more serious obstacle of the doctrine of " common employment," which excludes liability when the injury is caused to the workman by reason of the negligence of a fellow workman in the employment of the same master. That the injured workman was bound to obey the orders of the fellow servant, whose negligence caused the injury, makes no difference.

The Employers Liability Act imposed on the master liability for accidents, causing injury or death, brought about by defects in works, plant, or machinery, due to the master's negligence, and for similar accidents caused by the negligence of fellow servants entrusted by the employers with duties of superintendence. The Act did not deprive the employer of the defences of *volenti non fit injuria* or contributory negligence. It was also legal for the workman to contract out of the Act.

The Workmen's Compensation Act of 1897 introduced into English law an entirely new principle. It initiated the idea that a workman injured in his employment should be entitled to compensation, irrespective of any question of negligence. This new principle thus introduced was stated as follows in the first section of the 1897 Act :—

" If, in any employment to which this Act applies, personal injury by accident arising out of and in the course of the employment is caused to a workman his employers shall . . . be liable to pay compensation."

Only certain employments were mentioned, and these were in connexion with what would be described as the more dangerous trades. In 1900 the Workmen's Compensation Act was extended to agriculture, and thus imposed upon a class of small employers—viz., the small farmers—the liability to pay compensation. The two principles of the 1897 Act that it should apply only to the more dangerous trades and, generally speaking, impose liability only upon the larger employers, were thus departed from. The Workmen's Compensation Act of 1906 codified and extended the Acts of 1897 and 1900. The 1906 Act extended to all employments with some few specified exceptions and industrial diseases were brought within its scope. The innovation which was perhaps of the greatest interest to our profession was that the county court judge was enabled to summon a medical referee to sit with him as assessor, and it was also made possible for the parties to refer their dispute, as to the extent or cause of the workman's incapacity, to a medical referee. In 1919 a Departmental Committee was appointed to inquire into the working of the present system of compensation to workmen for injuries sustained in the course of employment. This Committee reported in 1920.

It is to this report that I am indebted for my information as to the history of the previous Acts and from which I quote freely. As a result of this report the Act of 1923 was passed. In this additions were made to the weekly compensation payable under the Act. Compensation was made payable on the fourth day of incapacity (the first three days being paid for if the incapacity lasted for four weeks) instead of, as under the old Act, in which compensation was paid only at the end of the first week (this week being paid for if the incapacity lasted a fortnight). The 1923 Act also raised the maximum income for non-manual workers, included in the Act, from £250 to £350 per annum. There were also other alterations in procedure which are not, however, of much interest to us. Finally, in December, 1925, an Act was passed to consolidate the law relating to workmen's compensation. In a large measure this repeals the 1923 Act and entirely repeals the 1906 Act.

The Act of 1925 is practically on the lines of that of 1923, but generally simplifies the procedure. What perhaps is of most interest to us is that an employer can diminish or end the weekly payment to a workman if the certifying medical practitioner gives

a certificate that the workman has wholly or partially recovered, and if after the lapse of a certain specified time no counter certificate by another medical practitioner has been furnished by the workman. In the latter case the parties may go before the medical referee who can decide the case. This power was present in the former Acts, but not so clearly expressed.

THE OBJECTS OF LEGISLATION.

To its earliest advocates employer's liability was rather a means of securing greater protection for the workman's life and limb than of providing compensation for those injured by industrial accidents. The idea was that if accidents could be made costly to the employer he would thereby be induced to take steps to avoid them. Whatever may have been the original intention the plan by which accidents were to be prevented by being made costly was defeated, at any rate for the time being, by the growth of accident insurance. The effect of this was that the liability imposed on the individual employer was no longer seriously felt and the provision of some measure of support for the workman and his dependants was looked upon as the sole proper function of the Employers Liability Act. There are, as you know, the Factory and Workshops Acts and the various Mines Regulations Acts which are intended to provide for the prevention of accidents.

There is, however, no reason why the Workmen's Compensation Act should not also contribute towards improving the measures taken for the prevention of accidents. In America, although Workmen's Compensation legislation was unknown before 1906, considerable advance has been made in this direction, and apparently originated with the insurance companies. "Merit rating" is the means by which workmen's compensation statutes have been made to advance the accident prevention movement in America. It involves recognition of the principle that the employer who takes all reasonable steps to safeguard his employees should pay less for accident insurance than the employer who fails to take such steps. This is assisted by an organised system of inspection, and, in the case of mines, by a safety engineering service, which devotes itself to the improvement of the safety conditions of each mine.

It is interesting to note that very much the same influences are now in America endeavouring to speed up the complete recovery of the injured workman and to lessen the time during which he draws compensation allowance. In 1920, according to the report of the Departmental Committee, the only approach to anything of this kind in this country is that by their system of "special rating" insurance companies, in respect of large risks paying, say, £10,000 a year in wages, reduce rates where the experience of two or three years shows "few accidents, as a result of good management, good plant, and all that." Reduction of premium follows experience alone. There is no systematic inspection; the existence of a safety or welfare committee is not a factor, and no reduction of premium is offered on the ground that safety precautions are taken. It is obviously to the interest of those employers, who are large enough to insure themselves, that the incidence of accidents should be as low as possible, but whether their system of accounts would show whether or not they would merit the reduced rate for "few accidents" were they insured outside I do not know.

That the matter is of some importance to us all can be gathered from the figures given by the departmental report in 1920. The present system, it says, imposes on employers a burden of upwards of £8,000,000 per annum, and the total number of workers within the Act is calculated to be about 15,000,000.

WHAT IS AN ACCIDENT?

To uphold a claim under the Act for personal injury it is necessary to show that the injury was sustained as a result of (1) an accident arising out of and in the course of the employment, or (2) one of the industrial diseases brought specially within the scope of the Act.

The meaning of the term "accident" is now well settled by judicial interpretation. In the earlier cases the Court of Appeal held that the idea of something "fortuitous and unexpected" was involved in the term "accident." The House of Lords, however, have applied a construction which is more favourable to the workman. In the words of Lord McNaghten, "the expression 'accident' is used in the popular and ordinary sense of the word as denoting an unlooked-for mishap or an untoward event which is not expected or designed." At a later period this definition was extended, and it was decided that the mishap or occurrence must be looked at from the workman's standpoint, and that whatever its cause or origin it will be treated as accidental unless designed by the workman himself. This definition has been held to be wide enough to include such cases as heat-stroke, chill developing into inflammation of the kidneys, and the rupture of an advanced intrathoracic aneurysm.

While an "accident" must be due to some particular occurrence at some particular time this condition does not necessarily exclude disease. For example, a workman who had been sorting infected wool contracted anthrax in the eye. "It was found," states the report, "that at a particular time a bacillus from the infected wool had alighted on his eye." (To the legal mind, I believe a bacillus is something like a gnat.) A Lord Chancellor observed—

> "that while it was essential that there should be some particular occurrence happening at some particular time . . . what that particular time was is immaterial so long as it reasonably appears that it was in the course of the employment."

Diseases of gradual onset such as lead poisoning are on a different footing. These cases are not "accidents," because they are not traceable to any particular occurrence in the course of employment.

The workings of the legal mind on medical matters are to me always a mine of interest. One would have thought that the mind which could have envisaged a bacillus alighting on the eye would have made little difficulty of the inclusion of a particle of lead in a nerve-cell. Fortunately both these conditions—anthrax and lead poisoning—are scheduled under industrial diseases, and there is no necessity to invoke the term "accident."

THE BASES OF A CLAIM FOR COMPENSATION.

To succeed in a claim for compensation it must be established that the workman not only suffered "personal injury by accident," but also that it was an accident arising "out of and in the course of his employment." These words were the foundation of the 1897 Act, and have been reproduced unaltered in every Act since. The matter was thoroughly discussed in the Departmental Committee, and it was finally decided that it was desirable that the phrase, which had been the subject of so much judicial consideration, that its meaning was well settled, should be retained in that same form. The view was expressed that—

> "as there must be some limiting words, and as these words have received judicial construction over and over again, it would be wiser that they should be retained rather than that any fresh form of words should be substituted."

It was also pointed out that other States, which have in recent years adopted workmen's compensation legislation, have imported the classic British phrase. In the United States, for instance, only four States use alone the phrase "in the course of the employment," while in all the others an accident must arise "out of" as well as "in the course of the employment." In France the expression is "Les accidents survenus par le fait du travail ou à l'occasion du travail."

I think it may be stated as a fact that, owing now to the number of cases that have been decided under those Acts, and to the manner in which the law has been codified and rendered more simple, the legal position of any plaintiff, except in very rare cases, is clear provided the facts can be proved.

With very few exceptions the facts in dispute are in connexion only with the medical aspects of the case, and it is here that the whole matter bristles with difficulty and is often befogged by doubt. It must also be remembered that there is no court of appeal on the facts of the case. Appeal is, I understand, allowed only on points of law, and not on the much more controversial matters involved in the medical evidence. To the legal mind, untrained in medicine, it must sometimes appear that the opposing doctors, apparently in all good faith, are expressing views on the same circumstances which are poles apart. Often the difference is more apparent than real, and depends more on different methods of expression or on inequalities of emphasis than on any real divergence of opinion on what are the essentials of the case.

But quite apart from this there is, in this class of case, plenty of room for an honest difference of opinion with regard to the essential points at issue. This difficulty is not lessened when the plaintiff, either from ignorance or from motives less naïve, exaggerates or imagines the symptoms which are responsible for his incapacity. Yet it is on controversial material like this that a tribunal, untrained in medicine, may have to come to a decision. I am referring to those cases where a county court judge sits without a medical referee. From this decision on the medical evidence there is no appeal, as the courts above assume the findings of the county court judge as the facts of the case.

DIFFICULTIES IN CONNEXION WITH CLAIMS FOR COMPENSATION.

The difficulties in connexion with these cases come under two heads:—

1. The question of entitlement. Is the workmen's incapacity the result of an accident or has it been aggravated by an accident or is it due to some other cause? This is often largely a matter of diagnosis.

In actual fact I imagine that this difficulty arises in only a comparatively small proportion of cases, administered under the Act, as in the majority of cases the accident and the result are obvious. They form, however, a large proportion of the cases which are referred for opinion to surgeons.

2. The question of the duration of incapacity.

This is a matter of a vast difference of opinion between employers and employed. It is often a matter of very considerable difficulty for a conscientious surgeon to decide at what period the injured workman ought to be forced, under the penalty of losing his weekly compensation, to resume his normal employment. It is in my experience comparatively rare to come across cases to which the harsh term of malingering can be applied, but one sees numbers of cases in which a few weeks of inactivity appear to promote an "inertia" and "a work-shyness" which are exceedingly difficult to overcome, and to which the certifying doctor often shrinks, for some months, from applying the drastic remedy of refusing a certificate. It would be impossible to compute the number of working days that are thus lost to the community, or the thousands of pounds thus paid in unnecessary compensation and, what I think is of even greater importance, the damage done to the workman's own morale.

I am not suggesting that this is peculiar to cases which come under the Workmen's Compensation Acts. There is always a startling contrast in the time taken to resume the normal occupation, after accidents incurred at football, hunting, &c., where the responsibility of the incapacity rests with the patient, and the time taken to recover from accidents for which the responsibility rests on others. But it is the enormous number of workmen's compensation cases that renders the matter of so much importance. With a little more encouragement on the part of our profession and, shall I say, some fraternal persuasion, I believe this time could be materially diminished with a considerable effect on the cost of production in our various industries.

SPECIAL DIFFICULTIES IN NERVOUS CASES.

Perhaps of all the pitfalls that beset the surgeon in deciding the question of entitlement, those which arise in connexion with diseases of the nervous system are the most difficult to avoid. Diseases of the nervous system are often insidious in onset, and if the first obvious subjective evidence of an insidious disease, possibly of some standing, should happen to coincide with a slight injury, it would be contrary to the ordinary tendency of human reasoning if the injury and the disease were not regarded in the relationship of cause and effect. The following are a few brief examples of this.

A. B., aged 39, an engine-driver, whose temper for some time had been noticed to be deteriorating, on Oct. 20th, 1924, after a few words with his foreman, slipped and fell on his head while getting off the foot-plate of his engine. He picked himself up and smoked a cigarette, and then noticed that some blood was dripping from a small scalp wound at the back of his head. He attempted to stop the bleeding with a cloth, and lost consciousness. I suggest that he fainted. He was taken to a hospital and regarded as a case of concussion. He became violent and, finally, at the end of three days, left the hospital against advice. He was now labelled cerebral irritation following concussion. He was at home for a fortnight, but behaved so peculiarly that he was taken to the infirmary and remained there until Nov. 20th. On admission to the infirmary he was found to be emotional with hesitating speech, and he suffered from headaches. He also had distinct delusions, and once escaped from the hospital. He was again regarded as a case of cerebral irritation following on the injury to the head.

When seen on Dec. 18th the man stated that he was in perfect health and demanded to return to work. He was tremulous, with indistinct speech, which he attributed to the loss of six teeth in the infirmary. His deep reflexes were increased. His pupils were unequal and inactive to light. There was a small scar, which was not tender, on the right side of his occipital region. At this period it was not difficult to realise that this was a case of general paralysis, and this was afterwards confirmed by a neurologist who, however, also was of opinion that the condition had been accelerated or aggravated by the injury to the head.

The subsequent history of this man is of interest.

In February, 1925, he was admitted into a mental hospital under certificate with marked mental and physical signs of general paralysis of the insane. His blood and cerebrospinal reactions were positive. While in this hospital he was treated with injections of malarial organisms; he was allowed to leave in July, as his mental condition had become normal. He was seen again in March, 1926, when he appeared to be perfectly rational, but his pupils did not react to light and there was still a marked activity of his deep reflexes. This man was seen by a mental expert as late as August of this year, when his mental condition was stated to be satisfactory, but there was still tremor of his hands and of his tongue on protrusion. His pupils did not react to light and his knee-jerks were brisk. The man is now back at work, and is at present driving a small engine in a yard, but he is naturally not allowed on "the road."

Tabes dorsalis is the cause of many difficulties.

In June, 1919, C. D., a man aged 45, was loading up some postbags into a van, when the barrow, on which he was standing, moved, and he twisted his body and fell against the side of the barrow. This happened just as he was coming off duty, and he had finished his work. He did not return to duty the next day, and it was stated that he had strained his back and his abdominal muscles. He returned to work for short intervals during the autumn of that year, but was more often absent, and was always furnished with certificates of "injury to the back muscles, &c." In March, 1920, his employers refused to continue his compensation payment, and the man threatened an action. This did not materialise until 1924. When he was examined for the purposes of the action he stated that he had "lost his strength," and that "his legs gave way," and that he had "pain across his back." His pupils reacted very sluggishly to light, and his knee-jerks could not be obtained. It also transpired that he had been under treatment at a London hospital for four years, and that he was gradually improving. The case came into court and was referred to the medical referee, who decided that it was one of tabes dorsalis, and had no reference to injury.

In this instance the man was undoubtedly as much deceived as were his doctors in the early stages of his illness. (Probably the real villains of the piece were the solicitors, who persisted in the claim in spite of the fact that they produced no medical evidence.)

[A somewhat similar case was here narrated in detail where a syphilitic affection of the central nervous system had first manifested itself three days after a trivial accident.]

A strange case was that of E. F., a vanguard, aged 16, who was seen on Oct. 6th, 1924, and who was then evidently recovering from a right hemiplegia and aphasia. His own statement was that in the previous April (six months before), while lifting an empty petrol tin off a lorry, he slipped and stumbled against the side of the lorry, hurting his right arm and leg. He said nothing about this at the time, but on the next day he went sick and on May 2nd went to the infirmary, where he gradually became paralysed down the right side and also lost the power of speech.

What E. F. forgot to mention was that, previous to the alleged accident, in March he had been admitted to the same infirmary with an obscure febrile disease and headache. He gradually improved, and was discharged on April 14th. He was readmitted on May 2nd, and certainly then told the doctor of the infirmary that he had scraped his knee against the "tailboard of a wagon," but, unfortunately, on this occasion, in order to account for the fact that an alleged abrasion had healed he had had to antedate his accident 10 days. As a matter of actual fact, there was never any evidence of an injury except the boy's own statement, and he had never made any mention of one until he reached the infirmary.

While he was in the infirmary on the second occasion there was a gradually increasing paresis of the right arm and leg, with aphasia, and this gradually cleared up. The Wassermann test gave a negative reaction.

It was not until he had practically recovered that the diagnosis of encephalitis lethargica was made, and I should imagine that was probably the correct one. It would, however, have been an awkward case to have dealt with if the boy had selected an injury, say, to the left side of the head instead of injuring his right arm and leg.

[Another case, which might, perhaps, be explained as one of undiagnosed encephalitis lethargica, was described. The earliest symptom was noted just after a very slight injury, and loss of consciousness, aphasia, and paralysis followed. The patient ultimately recovered.]

A trivial injury is often held to be responsible for symptoms which are afterwards found to be due to the insidious onset of a cerebral tumour. Of this the following case is an example :—

G. H., aged 34, on March 22nd, 1922, while pulling a crate of furniture down from his van fell and struck the ground with his left temple. The crate also fell on him, and caused him to cut his lip. This happened immediately before the dinner hour, and after his meal he resumed his work. Later in the day he reported the accident, but did not go sick, though he went to his doctor and got some medicine. He occasionally felt queer, but it was not until September (seven months afterwards) that he complained of severe and continual headache. He still continued to do his work for over a year, and it was not until December, 1923, when he was attending a hospital for a trivial injury to his wrist, that he came under the observation of a neurologist (one year nine months after).

He then went off duty, and when examined in February, 1924, it was found that he had partial paralysis of the left third, fifth, sixth, seventh, and eighth nerves, pain over the left side of the head, and double vision. There were no symptoms of increased intracranial tension and no optic neuritis. His reflexes were normal, and there was no paralysis of the limbs. Examinations of the blood and cerebro-spinal fluid, and an X ray photograph of the skull revealed nothing abnormal. A diagnosis of a tumour at the base of the brain was made and, as the physician and surgeon in charge of the case were unable to exclude the possibility of injury as a cause, liability was admitted.

In October, 1924, at another hospital, it was thought that he might have an eighth nerve tumour, and his posterior fossa was explored but nothing abnormal was found. The man is, I am glad to say, still alive (Sept. 21st), though he still presents the picture of a tumour at the base of the skull.

Whatever name we may give to it, we have to admit that a certain group of symptoms may follow the *commotio cerebri* which results from the shock of any serious injury, particularly a head injury. Sir Frederick Mott called the condition "traumatic psychasthenia due to a functional disturbance of the brain as an organ of mind." I need scarcely describe the symptoms of a typical case. But it is not over the typical cases that there is any difficulty.

The liability for a typical neurasthenia or psychasthenia following, with no loss of continuity, a straightforward and definite injury has to be admitted, and the only question is to get the man well and back to his work as soon as possible, both for his own and for his employer's sake.

Unfortunately the term neurasthenia has gradually become to be applied to indefinite conditions, often following very trivial and very vague accidents, and these cases present every kind of difficulty.

THE BORDER TERRITORY OF MALINGERING.

In a few cases the distinction between a pathological condition and frank malingering becomes extremely fine. In the majority there appears to be a condition of mental and bodily "inertia" which appears to rob the patient not only of all ambition but of what many of us would regard as ordinary self-respect. Such patients are content to live idle lives, drawing somewhat less than their ordinary pay, rather than make the mental effort necessary to resume their ordinary occupations.

[The point was illustrated by a case of slight injury to a man of poor physique, where careful and repeated examination revealed no organic cause for the symptoms of which he complained. His employers ultimately decided to cease paying his compensation, and he brought the case into court. He produced medical evidence that he was suffering from traumatic neurasthenia, the result of the accident, and a sympathetic county court judge, who quite ignored his medical referee, practically settled the case in his favour by forcing a compromise on the employers.]

L. M., aged 21, who was seen in April, 1925, stated that he was hit on the right side of the lower jaw by the handle of a barrow on May 16th, 1924, nearly a year before. He said that he remembered nothing of the accident, but that he was assisted to an ambulance station and then went to a hospital, but was not detained. He remained away from work until August, when he was given light work, on a certificate from his doctor that he was suffering from "traumatic neurasthenia." L. M. was a sturdy-looking man, 5 ft. 4 in. in height and 9 st. 10 lb. in weight. He thought that he had gained slightly in weight since the accident. He complained that occasionally he had "a feeling" the nature of which he was unable to explain, which at times prevented him from stepping on to a train to go to his work. It did not occur to him to walk there, a distance of about two miles. He also suffered from loss of memory, but could not give many examples of this, except occasional inability to express himself or to give an account of his doings. He did not think that he had ever forgotten to have a meal. His father, who was 48 years of age, had not worked for some time owing to "chest trouble." The mother did not go out to work, and the family was in receipt of Poor-law relief.

Beyond a slight tremor of his hands, L. M. presented nothing abnormal. The jaw itself, the original seat of injury, had never given rise to any trouble; he had suffered an injury to the jaw of a severity no greater than is constantly sustained on any football field and which does not, as a rule, prevent the player from finishing the game after a short rest. But for the intervention of a sympathetic ambulance man I doubt whether it would have occurred to L. M. to have gone to a hospital. The hospital authorities evidently thought little of his injuries, and allowed him to go home.

Circumstances in the shape of a poor home and the Workmen's Compensation Act led L. M., a youth of low mentality and a lazy nature, into a life of semi-invalidism. One could not say truthfully that he was malingering. There was the slight tremor of the hands, and his pulse-rate was raised to 100 throughout an interview of over half an hour. He was, however, undoubtedly making the most of a very slight disability. With a minimum of resolution on his part he could have undertaken any work for which he was mentally and physically fitted. He had unfortunately been labelled with the term neurasthenia, the nature of which had apparently been indicated to him, and he was content to remain neurasthenic so long as the stimulus of want did not force him to do a decent day's work. It is cases like this which do not present the pleasantest aspects of the Workmen's Compensation Act.

THE ASSOCIATION OF ACCIDENT WITH TUBERCULOSIS.

But it is not only these obscure nervous cases which present difficulties with regard to entitlement. It must be within the experience of all of us that a large proportion of cases of surgical tuberculosis, particularly in the case of joints and the spine, are by the public supposed to originate with an injury. In fact, this is not confined to surgical cases, and I remember many years ago, when I was a resident at a children's hospital, how all the cases of tuberculous meningitis appeared to have arisen as the result of injuries. Investigation showed in most cases that the injury was an after-thought, and often the only evidence of it was the fact that the child had something wrong with its head. So deeply rooted in the public mind is the belief that disease must be caused by something outside the patient, and the easiest cause to invoke is usually an injury.

N. O., aged 34, a weakly-looking man, was seen on Dec. 29th, 1923. He stated that on Nov. 30th, while standing "astride a dyke," and shovelling out soil, he struck his left testicle with the handle of his shovel. He continued his work for the remainder of the day, some six or seven hours. Since then the organ has remained tender and swollen. The epididymis was enlarged and indurated, and the vas was nodular. The testicle itself did not appear to be affected. The case was obviously one of tuberculous epididymitis, and it was not considered that the accident a month before had much to do with its causation. The man, however, was advised otherwise, and was taken into a hospital largely, if not altogether, supported by trades-union funds. The case was there regarded as a hæmatoma of the testicle, as the result of injury, until it was removed in May, when it presented all the features of an advanced case of tuberculosis of the testicle. The man brought an action against his employers in November, 1924, which was resisted on the ground that the accident, which was of a trivial nature, had merely called the man's attention to what was already present. The judge, however, sitting with a medical assessor, took the view that the accident of Nov. 30th had aggravated the condition, which may have already been present, and the man obtained his compensation. I have since learnt that he has undergone another slight strain, and that a similar operation has had to be performed on the right side.

The question of the relation of injury to tuberculous epididymitis is interesting. I have never myself seen tubercle follow a gross injury to the testicle, such an injury, for instance, as produces a hæmatocele. In all the cases I have seen of tuberculous testicle, of which injury has been alleged to be the cause, the injury has been always either very slight, or of a nature so vague and shadowy as to raise doubts as to its existence.

Two of my patients were convinced that the tuberculous epididymitis for which they were admitted to hospital was caused by bracing up their trousers too tightly, and I was never able to persuade one of them that this probably had had nothing to do with it and had merely demonstrated to him that he had a tender organ. I should like to hear the experiences of other surgeons on this point.

ACCIDENTS IN THE SYPHILITIC.

Somewhat similar to this, though the disease in question was different, was the case of P. Q., a travelling ticket collector, who was seen in May, 1925. He gave a history of a parcel falling on his shoulder and then hitting his right testicle in May, 1919. He continued to work for a week, although the organ was swollen. He then went off duty until August, and finally the testicle was in October, 1919, diagnosed at a hospital in London as malignant and removed. He resumed work in December, and continued to do so until November, 1923, when he fell between a moving train and the platform and fractured some ribs. He had not worked since then. In the meanwhile his liver had enlarged.

The case was regarded as one of malignant disease of the liver, secondary to a malignant testicle. The question for decision was whether an injury could be held responsible for malignant disease of the testicle. Fortunately this very difficult question did not have to be answered.

Further investigation revealed the fact that the testicle removed in 1919 proved, after removal, to be a gumma. P. Q.'s blood gave a positive Wassermann reaction, and he was also found to have a syphilitic ulceration of his larynx. Under appropriate treatment he improved rapidly, and was glad to receive compensation for the enlargement of his liver, which was rightly held to have been aggravated by the injury in 1923 to his ribs and chest. He is still alive and in comparatively good health.

It is quite impossible to lay down any general rule about the relationship of tuberculous joints and injury. Each case must be decided on its merits, but where there is a definite, well-proved injury to the joint in question, then I think it is impossible to resist the contention that the condition of the joint, if not caused by, may have been aggravated by the injury.

JOINT INJURIES AND OSTEOARTHRITIS.

But if there is difficulty about tuberculous joints that difficulty is increased tenfold when we come to cases of osteoarthritis. The condition is extremely common amongst manual workers above a certain age, a fact which may, perhaps, suggest that repeated and slight injuries to the joints may play a part in the causation. It is also a fact that amongst men of this class one sees an enormous number of septic mouths. The disease is insidious in its origin, and consequently the first intimation a man may have that there is anything wrong with his joint is on the occasion of a trivial injury to it. It would be asking too much of human nature if he did not attribute to the injury any subsequent disability of the joint.

Not an uncommon example is that of an elderly workman who has continued to do his routine work without it being noticed either by himself or by others how stiff and awkward he was becoming. Some trivial accident lays him up and once having got out of his stride he finds himself unable to resume work. The following case illustrates this point:—

R. S., seen on June 11th of this year; 65 years of age and 47 years in one employment. On March 12th a bundle of iron pipes which he was carrying fell on his insteps, chiefly on his right. He left his work and walked some distance home. By his doctor's advice he remained in bed for two or three weeks. Since then he has been getting about, but always in pain. He now has osteoarthritis of both knee-joints, sufficiently advanced to reduce him to the condition of a cripple. Nothing could be found wrong with his feet, although he asserted that he was suffering "agony" in both of them. It was almost pathetic to watch him attempting to locate in his feet the pain which he undoubtedly suffered in his knees. The slightest passive movement of the latter was painful, while his ankles could be moved with impunity. His attempts to reverse these facts were almost heroic. It was quite obvious that a weight falling on the insteps in March could not produce a crippling deformity of the knees by June. The man was, in my opinion, perfectly straightforward, he was genuinely puzzled, and could sum up the situation only by repeating "that he was not like it before the accident." Naturally, as it was on his feet that the weight dropped, there, he reasoned, should be the pain. It is my belief that already in March he had advanced osteoarthritis of both knee-joints. He was, however, able to carry on, perhaps slowly and stiffly. The accident threw him out of his stride, and was, therefore, an aggravation of his condition.

The following case illustrates the difficulties that a very cunning or a stupid man may introduce into what should have been a straightforward case:—

T. U., a carriage cleaner, aged 63, was seen in July, 1923. He stated that in August, 1919 (four years previously), while cleaning a coach he fell into a pit 4 ft. deep and hurt his left arm and right knee. That he was laid up for eight weeks until Oct. 18th, and was paid compensation for that period. That he resumed work until Dec. 29th, 1919, when he went sick with "influenza," and from that period, December, 1919, he had not worked again. While he was laid up with "influenza" his right knee and then his left became swollen and painful, and had since remained so.

When seen in 1923 there was marked deformity of both knees, the joints were distended with fluid, and the bony surfaces, forming the joint, were distorted by large masses of new bone formation. There was also marked lateral mobility. Both joints were comparatively painless and presented a typical picture of the joints described by Charcot. Neither then nor at any time could any evidence of disease of the central nervous system be detected, and it was ascertained that a Wassermann test, made at the hospital he was attending in 1922, had proved negative. By a coincidence, I had seen this man at the examination hall some months previously, when the condition of his joints and the

complete absence of any evidence of disease of his central nervous system had aroused comment.

At first sight the case seemed to be straightforward from a compensation point of view. Whatever one may have thought of the nature of the arthritis, there seemed to have been more or less direct continuity from the time of the accident until the commencement of the knee condition, and it was advised that liability should be admitted. What, however, T. U. had omitted to mention was that after resuming work in October, 1919, he worked for 14 months until December, 1920, before going sick with influenza. The certificates given by his doctor in 1921 were for influenza until February, when rheumatism as well as influenza was mentioned, and finally arthritis in March. The case, therefore, resolved itself into that of a man who had an injury, chiefly to his shoulder, in August, 1919. There was then no mention of his knee. He resumed work in October, 1919, and continued to do his ordinary full work until Dec. 29th, 1920 (14 months), when he went sick with a febrile disease. While he was laid up during February and March, 1921, an obscure condition of his knee-joints developed, resembling an arthropathy. There was, therefore, a period of 18 months between the date of the accident and the first evidence, beyond T. U.'s uncorroborated statement, of any disease of the knee-joint.

In spite of this the case was taken up by the man's trade-union and brought into court, when T. U. finally had to admit that in his previous statements he had omitted a year. The case was decided in favour of the employer. The union, however, produced medical evidence that the man's condition was due to the injury in August, 1919.

DIFFICULTIES IN CONNEXION WITH SPRAINS AND FRACTURES.

The expressions "strained," "ruptured," and "contused muscles" are constantly seen on certificates given in connexion with accident cases, and it is wonderful for how long a time a strained or partially ruptured muscle may continue to give trouble, particularly when it is in the back. The following case is fairly illustrative of this class of injury.

V. W., aged 41, while working in a railway cutting in September, 1920, fell or rolled down a bank about 10–12 ft. high and hurt his back. He was taken home on an ambulance and seen by a doctor who said, according to V. W., that he had "twisted or sprained his vertebræ." He was laid up for eight weeks (six of which were in bed). He then resumed light work, but could not use a shovel or wheel a barrow. He was appointed as look-out man, and merely had to warn the gang of an approaching train.

In May, 1923, he was admitted into a London hospital, and some tenderness and rigidity of his back muscles was noted. These muscles were twice stretched under an anæsthetic. According to V. W. and his solicitor, this operation was for the purpose of replacing a displaced vertebra. He was discharged from the hospital in June as cured. He had never, however, returned to work, even to light work again. When he was seen in February, 1924 (three and a half years after the accident), he was a healthy-looking muscular man. He stated that his back began to ache in the afternoon, and became weak towards night. He was unable to lift anything. There was no tenderness nor rigidity of the back muscles, and the movements of the back were perfect. He could do exercises that would be the envy of the majority of men over 40. He had practised these exercises since leaving the hospital, and had evidently done so with enthusiasm. A thorough examination revealed no evidence of ill-health.

V. W. very possibly ruptured some fibres of his back muscles at the time of his accident in 1920. With a little determination on his part, aided possibly by some forced movements of his back, he should have been able to return to work in a few weeks. He, however, nursed his back and refused to use it. Consequently, two and a half years afterwards, a surgeon had to do under an anæsthetic what V. W. could have done for himself within the first few weeks of the accident.

He had in the meanwhile acquired a habit of leisure which he was unwilling to disturb. His wife took in lodgers. They had no children, and he was comfortable and well looked after. He went to bed at 10 P.M. and arose at 9 A.M. A contrast to the ordinary life of a labourer on the line. This idyllic existence ceased, however, when his employers, on advice, refused to continue to pay his compensation, and the man resumed his normal work.

There is no difficulty about entitlement with regard to a fracture; the difficulty here arises as to the date of the man's return to his regular employment. Probably few of us, who are engaged in hospital practice, realise the length of time that elapses before a workman, who has broken a limb, particularly one of the lower limbs, returns to his normal work. His fracture may do well and the surgeon is pleased with the union and with the alignment. The patient passes on to the surgical out-patient department or to the orthopædic department, and everyone is satisfied with the return of function, as the result of massage, exercises, &c. Possibly some months afterwards an energetic surgeon or house surgeon may send for him and be told that he has returned to work. Too often he has gone back to "light work," and may remain on that for one, two, or three years or more. Sometimes he obtains his certificates from the hospital, but more often from his panel doctor, who did not have the opportunity of watching the case from the beginning.

As a rule, light work is not what may be regarded as economic labour. Sweepers, watchmen, mess-waiters, lift boys (who are no longer boys) are the usual type of "light workers." They are being paid a wage which, while it never exceeds 30*s.* per week, equals half the wage of the employment at the time of accident plus half the difference between this and the wages they would have received had they remained in their old occupation.

Fractures in the region of the ankle-joint are the most typical examples of this. I remember nearly 20 years ago the late Mr. Clinton Dent saying that seldom, if ever, did a policeman who had sustained a Pott's fracture return to his normal duties. These are two common instances.

A man, aged 54, sustained a fracture in the region of the right ankle in July, 1921. He was seen in March, 1924 (nearly three years afterwards), when he displayed a result of which any surgeon might be reasonably proud, and there was no stiffness of the joint. There was, however, the slightest degree of flat-foot. He had been told to continue the exercises he had learned in hospital, but his clumsiness in performing them at once proclaimed the fact that he had not done so.

The next case, aged 47, was seen in June, 1925. Fracture of left ankle in March, 1923. So far as the fracture was concerned the result was excellent. There was no deformity of the ankle, and the movements of the joint were good. There was, however, a slight degree of flat-foot and the muscles of the calf were somewhat wasted. He had been taught to do exercises at the hospital, but had not done any for some months.

I could multiply these cases ad libitum. Good anatomical results, no stiffness of the joint, and everything possible done at the hospital to promote the recovery of function. But numbers of these men leave the hospital and spend their time standing and limping about and seldom, if ever, make any attempt to continue the exercises they were taught to do. There is, of course, in addition to these the usual proportion of bad results of fractures. These may be regarded as inevitable as the result of the original violence. Occasionally, too, one comes across a case where no attempt was made at the hospital to restore the function of the limb after union has taken place. But there remains over and above these a number of men to whom function appears to have been restored, and yet who do not possess the will to make economic use of it.

Our ordinary hospitals appear to have done what is usually regarded as their duty. They are chiefly concerned with the humane endeavour to save lives and to restore function to damaged limbs. Whether the man makes any economic use of his restored function does not appear to be any concern of theirs. Industry would seem to require another kind of hospital, or what might be called an "after-care centre," where by constant personal supervision and encouragement these men can be induced to overcome the apparent diffidence they have in their own powers. Hospitals of this sort were initiated towards the latter part of the late war where men, by means of workshops and other devices, were taught to make use of their already restored powers and were, by encouragement and precept, inculcated with the will to return to their duties. There is something wrong when we find men, three or four years after a comparatively trivial injury to the muscles of the back

or a straightforward fracture of the leg, still unable or unwilling to take their proper place in life.

I have touched but slightly on the fringe of a vast subject. Many obvious subjects for discussion, for instance, hernia, I have not mentioned.

BLOOD TRANSFUSION IN CHILDREN'S PRACTICE.

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THIS paper is an attempt to estimate the place of blood transfusion in the treatment of sick children. During the year 1925 I gave a large proportion of some 600 transfusions at the Hospital for Sick Children, Toronto, with results excellent in some cases, inconclusive in others. While my conclusions are based on these observations, I submit also statistical evidence to serve as a basis of comparison. Statistics are no substitute for clinical judgment, but they may confirm it or, by conflicting with it, they may direct attention to some unsuspected factor. The technique of the transfusion was the same throughout the year; it has been standardised for several years past at this hospital. The possibility of a technical breakdown is, therefore, practically eliminated.

THE BLOOD TRANSFUSION OPERATION.

To be successful this operation must be performed with the same care and under the same conditions as any other major operation.

The donor, wearing sterile cap and gown, lies upon an operating table with his arm on an arm-board placed at right angles to his trunk. The elbow is cleaned all over with absolute alcohol and covered with sterile towels, leaving the antecubital fossa exposed. A folded towel under the olecranon ensures hyperextension. On a second table lies the recipient with his feet near the donor's arm. The foot which is not being used is made fast with a webbing strap and the other is held by a nurse, who rotates it outwards so as to expose the internal saphenous vein at the ankle. The patient's foot and the nurse's hands are cleaned with absolute alcohol and covered with sterile towels, a circle of skin being left exposed round the internal malleolus. Two operators are necessary, one by the donor's arm and the other by the recipient's foot. They must be within reach of each other and of the instrument table, and both they and the instrument nurse must be surgically clean and wear cap, gown, mask, and gloves.

The first step is to examine the blood-grouping certificates issued by the laboratory and to make certain that they refer to the donor and recipient present and that these are of the same group. (Universal donors are never used.)

The recipient's operator, using a fine needle and 0·5 per cent. novocaine, raises a wheal over the internal saphenous vein, or, if the vein is not visible through the skin, over the ankle in front of the internal malleolus. An incision half an inch long is made at right angles to the vein and opened up with the points of fine scissors. The vein is identified and two fine plain catgut ligatures passed under it. The ligature nearer the heel is tied and artery forceps clipped on its loose ends to serve as a retractor. The other ligature is looped around the vein with a surgeon's knot, but is not drawn tight. The half inch of vein between the two ligatures is nicked in an upward direction with a pair of fine scissors; the transfusion needle is pushed through the nick and up the vein and the loose ligature tightened round it.

These transfusion needles are made of gold in various sizes. Their distal ends are smooth, having a short bevel, whilst their proximal ends are shouldered and take an adapter, to which is attached two inches of rubber tubing. The syringes used for transfusion are all-glass Luer syringes, graduated to 20 c.cm. and holding 25 c.cm. They are lubricated with sterile liquid paraffin.

To make sure the needle is actually in the vein a Luer syringe containing 5 per cent. glucose is attached by inserting its nozzle in the rubber tube and the plunger gently depressed. If the solution runs with difficulty and raises a subcutaneous swelling the needle must be withdrawn and reintroduced.

When fluid enters the vein easily the operation on the donor is commenced. To withdraw blood from the donor a 4 ft. piece of sterile flannel is wetted, passed round the upper third of his arm, tightened, and tied once. He makes the veins of his forearm stand out by clenching his fist and a wheal is raised with 0·5 per cent. novocaine over the most prominent vein. The skin is incised by transfixion through this wheal and the needle is passed through the incision into the vein. Were the needle pushed straight through the skin it might transfix both walls of the vein. The blood is withdrawn into an all-glass Luer syringe, graduated to 20 c.cm., the plunger of which has been lubricated with paraffin. The syringe is connected by two inches of rubber tubing to a metal adapter which fits the shoulder of the needle. The needle is made of rustless steel; its length is 4 in. and its calibre 2 mm. At its proximal end it has a square shield, the straight edge of which rests on the skin and prevents rotation. At its point it has a short sharp bevel. It is inserted into the donor's vein as follows.

The syringe, rubber tube, adapter, and needle are coupled up. The operator holds the needle between the thumb and first two fingers of the right hand and inserts the point through the skin incision, so that the needle lies at a slight angle to the vein. Steadying the skin by the side of the needle with his left thumb and forefinger, and holding the needle with his right thumb and forefinger, he pushes the point into the vein. At the moment of entry blood appears in the syringe. He now takes hold of the needle with his left thumb and forefinger and continues to hold it in this way throughout the operation. When the syringe is filled it is disconnected and handed to the other operator, who injects the blood into the recipient at the ankle. At the same time the instrument nurse hands another glass syringe to the donor's operator. There are five syringes in circulation between donor, recipient, and instrument nurse. The instrument nurse washes each syringe through with normal saline as she receives it and dips the end of the plunger in sterile paraffin. When the operation is complete the needle in the recipient's vein is withdrawn, the second ligature tightened, the wound closed, and a bandage applied. At the same time the donor's tourniquet is relaxed, the needle withdrawn, a pad placed on the wound, and the elbow flexed. Oozing soon stops and a bandage is then applied.

In my experience there is no better method of transfusing blood than this; it is simple, clean, and swift. The patient receives whole blood, yet clotting is rare. It can only occur in the needle, the rubber tube, or the syringe, any one of which is quickly replaced by a spare from the instrument table. I have often seen eight transfusions carried out without a hitch in two hours.

Infants and young children can safely take 15 c.cm. of intravenous fluid per pound body-weight, and the time allowed for this is five to ten minutes. In thoracic disease not more than 10 c.cm. per pound body-weight should be given, and that in not less than 25 minutes. This type of case is rare, as transfusion is of little value in thoracic disease.

Modifications of the Transfusion Operation.

1. *The use of citrated instead of whole blood.*

This is necessary when donor and recipient must be kept apart, as in acute infectious disease, and also if the recipient has a blood infection. The donor enters the operating room first and his blood is withdrawn in the ordinary way, but with 20 c.cm. syringes each already containing 2 c.cm. of 4 per cent. sodium citrate solution. The resulting dilution of citrate (0·4 per cent.) is sufficient to prevent clotting. The syringes are emptied into a sterile vessel surrounded with warm water. When sufficient blood has been collected the donor leaves and the recipient is brought in. The citrated blood is then injected by the usual method.

2. *The exsanguinating-transfusion operation.*

This operation, introduced by the late Dr. Bruce Robertson, of Toronto, aims at the removal of supposedly toxic blood and its simultaneous replacement by blood from healthy donors.

60 c.cm. per pound body-weight of the patient is collected by the citrate method and set aside in warmed vessels. The patient is brought in and a needle inserted at the ankle. One operator takes charge of this and the subsequent transfusion; the other drapes the groin and cuts down on the upper end of the opposite saphenous vein, exposing it as in Trendelenburg's operation for varicosity. The skin is infiltrated with 0·5 per cent. novocaine and incised, the fatty tissues are separated, and the vein identified at the level of the deep fascia over the adductor longus. Two ligatures are passed round it and the lower one is tied and left long to serve as a retractor. The upper ligature is looped round the vein. Between the ligatures the vein is nicked and a long steel needle of uniform thickness with a blunted distal end is inserted and slipped onwards until its point lies in the external iliac vein, when blood will flow from it. It should

be smeared with paraffin to make it enter easily. A 20 c.cm. Luer syringe containing 2 c.cm. of 4 per cent. sodium citrate is connected to the needle, and as one syringe is filled another is put in its place.

The two operators now commence the exsanguinating transfusion. As blood is withdrawn from the external iliac vein of one leg fresh blood is introduced at the opposite ankle. The exsanguinating operator sets the pace, since it is harder to withdraw blood than to inject it. An assistant keeps a written record of the amount of blood given and withdrawn, and calls out the figures at frequent intervals. It is essential that these figures be recorded accurately and announced audibly, to enable the operators to realise at once if any variation occurs in the total volume of the circulating blood. Rapid variations may lead to collapse on the one hand or cardiac embarrassment on the other.

At the end of the operation the needles are withdrawn, the veins tied off, and the skin sewn up.

Reactions during Blood Transfusion.

Reactions are almost unknown if the amount given and the time taken are kept within the limits laid down. They may possibly occur in premature or very young babies, and the early signs are cyanosis, distension of the veins of the neck, and lividity of the lips and finger-nails. Transfusion should be stopped and the child immersed in a mustard bath for 30 seconds and then rubbed briskly. Five minims of 0·001 adrenalin are given and the child is supported in a sitting position. If this does not give relief, blood is withdrawn from the longitudinal sinus by inserting a guarded needle through the anterior fontanelle.

RESULTS OF BLOOD TRANSFUSION IN CHILDREN.

1. *Accidental Shock.*—Blood transfusion is the most potent single remedy for this condition, as it restores the child when the commoner measures fail. Seven out of eight children so treated recovered from the initial shock, although their injuries were so severe that five ultimately died.

2. *Post-operative Shock.*—Post-operative transfusion increases the chance of success in certain emergency operations, and is an invaluable stand-by in operations of election which may unexpectedly cause death by shock. After craniotomy it is especially useful. In this series three children out of four developed a regular pulse and good colour and recovered consciousness, although before transfusion they had shown few signs of life. The repair of hare-lip, undertaken as it is in very young infants, may be complicated by shock; this happened on ten occasions. Transfusion improved them all and they made good recoveries. Twenty-two out of 24 infants who underwent pyloroplasty for pyloric stenosis improved after transfusion, and 20 made a good recovery. It was necessary to transfuse 14 children after operation for intussusception; all but one of these appeared better for it, though five ultimately died. On the other hand, transfusion was of no value after rib resection for empyema.

3. *Prematurity.*—Forty-eight premature infants received 73 transfusions, in 60 per cent. of which good results followed. A transfusion should be given on the seventh day of life if the infant is not gaining on a liberal diet.

4. *Hæmorrhage of the Newly Born.*—The commonest sites of bleeding are the rectum, umbilicus, and stomach. Transfusion is not a sovereign remedy but is the best available. It arrested the bleeding in 11 infants out of 17, and the clotting time in these 11 was found to be reduced by one-half.

5. *Septicæmia.*—Our observations hold out little hope that blood transfusion will prove an efficient weapon against septicæmia. Of 34 children from whose blood micro-organisms had been grown six got better and 28 died. The actual organisms were as follows:—

	Cases.	Deaths.
Staphylococcus aureus ..	12	11
Streptococcus hæmolyticus	13	10
Pneumococcus	6	5
Bacillus coli	2	1
Streptococcus viridans ..	1	1

Out of 50 blood transfusions only 17 did the patient any good. Exsanguinating transfusions were of no more use than simple transfusions.

The details of the six cases which recovered are as follows:—

(*a*) A streptococcal septicæmia following a compound fracture. A simple transfusion on the tenth day of the disease was followed by improvement in the appearance of the wound.

(*b*) A streptococcal septicæmia two days after opening up an acutely inflamed bone. No benefit followed exsanguination, although the child ultimately recovered.

(*c*) A streptococcal septicæmia four days after opening up a bone. An exsanguination lowered the temperature and improved the colour and appetite.

(*d*) A coliform septicæmia following umbilical sepsis. A simple transfusion followed by an exsanguination caused great improvement.

(*e*) A pneumococcal septicæmia following peritonitis, pneumonia, and empyema. The abdomen was drained and the child exsanguinated. Four days later the improvement was considerable.

(*f*) A staphylococcal and coliform septicæmia in a premature infant. Great improvement followed exsanguination.

As far as can be judged from these observations blood transfusion is not a remedy for active septicæmia. However, it does not make the patient worse, and there is always the hope that the solution may lie in some future modification of it.

6. *Tissue Infections.*—This group includes children who suffered from acute infection of one or more organs, but whose blood did not contain demonstrable organisms. That these were nevertheless often present is suggested by the results of blood transfusion, which were almost as unsatisfactory as in septicæmia. Five out of 11 children suffering from erysipelas died after receiving one or more exsanguinating transfusions without any benefit. A simple transfusion assisted the fading of the rash in the seven who recovered, while an exsanguinating transfusion brought down the temperature.

In the treatment of pneumonia little benefit was observed from blood transfusion. The actual operative danger of cardiac embarrassment was avoided by giving very slowly not more than 10 c.cm. of blood per pound body-weight. The only cases of pneumonia benefited by transfusion were already convalescent. In the earlier stages of broncho-pneumonia no improvement was seen in 29 out of 33 children transfused, while in lobar pneumonia the results were very little better. Transfusion has little value in meningitis, whether cerebro-spinal, acute purulent, influenzal, or tuberculous. All nine cases died. In the treatment of cellulitis of the cancrum oris type transfusion did little good and all the patients died. In general peritonitis only one patient out of seven treated by blood transfusion appeared any better; he, however, recovered. Far better results are obtained from continuous intravenous saline, now that a satisfactory apparatus has been devised for slow administration over several days. In pyelonephritis and in sepsis of the newly-born blood transfusion was of slight value. In acute mastoiditis (in one case accompanied by lateral sinus thrombosis) the results of transfusion were very good, but it is difficult to generalise from three cases.

7. *Burns and Scalds.*—So valuable is blood transfusion in these accidents that it should be the rule to group the blood of the friends as soon as a burned child arrives at the hospital. Their blood may be needed for two purposes. The first is to combat the shock of the burn within the first six hours; the result is often dramatic. The second purpose is not so widely understood; attention was called to it by the late Dr. Bruce Robertson, of Toronto. It is to counteract the toxæmia which a burnt child frequently develops. The onset is from 24 to 96 hours after the burn, and the symptoms are: (1) a sudden and rapid rise in temperature, perhaps six degrees in four hours; (2) a corresponding rise in pulse-rate; (3) muscular twitching and perhaps convulsions; (4) vomiting; (5) drowsiness or irritability. This secondary toxæmia is less often seen than it used to be owing to the inclusion in modern treatment of abundant administration of fluid and the selective action of the tannic acid spray (Davidson).

The treatment advised is an immediate exsanguinating transfusion, followed by a second one if the temperature does not fall within 24 hours. All the six children observed who developed toxæmia and received this treatment showed a rapid fall of temperature and mental improvement; muscular twitchings and vomiting ceased. Five of the six recovered and left the hospital. A burnt child has three dangers to overcome before convalescence—shock in the first 12 hours, toxæmia from the second to the fourth day, and sepsis after the first week. Against the first two dangers blood transfusion and the tannic acid spray are effective safeguards, but for the third little can be done and bad cases terminate in ten days.

8. *Acidosis.*—This is a common complication of the infections of childhood and infancy. Clinically, there is drowsiness with acetone in the breath and urine. The respiration is shallow and each inspiration is followed by a pause. Of the 17 children observed 14 were treated successfully by simple transfusion.

9. *Nutritional Disturbances of Infancy*—Transfusion benefits many children who do not respond to modifications of diet and to interstitial or intravenous glucose and saline. These patients may be divided into four groups :—

Group I.: Infants who fail to do well but are not acutely ill. These may be underfed or overfed breast babies, or bottle babies getting too much fat. Out of 16 infants who were losing weight 14 began to gain after transfusion, while appetite improved in 10 out of 12. Vomiting nearly always yielded to transfusion.

Group II.: Marasmic babies who are emaciated, subnormal in temperature, and liable to intercurrent infections. Of a batch of 75 of these, three-fifths gained in weight and about one-half ultimately got well after transfusion.

Group III.: Summer diarrhœa. Of 21 infants treated, two-thirds were improved and about three-quarters ultimately got well.

Group IV.: Acute intestinal intoxication. This is a much more serious condition than summer diarrhœa. Although diarrhœa and vomiting are frequently present, the outstanding diagnostic features are drowsiness and tissue dehydration. The onset is sudden, with great collapse, and often with muscular twitchings and convulsions. The complaint is common towards the close of a hot, dry summer and is often dangerous. In my judgment a simple blood transfusion should always be given. Of 139 infants who received 179 simple transfusions nearly 70 per cent. were improved, and the drowsiness, vomiting, and diarrhœa were relieved in more than 60 per cent. Forty-one exsanguinating transfusions were carried out, but I consider that the simple operations are as effective. The mortality among patients treated by transfusion was 37 per cent., considerably less than that among patients treated by other methods.

10. *Acute Infectious Diarrhœa.*—This is due to a specific bacterial infection of the intestine. The onset is sudden, with pyrexia, diarrhœa, and vomiting, which are followed by intense dehydration and collapse. There were only seven cases in our series, and three of them died. Improvement followed four out of eight simple transfusions, and all of three exsanguinating transfusions.

One particularly striking case was a boy of 12 who had had a *B. coli* enteritis for 18 hours and in whom it was difficult to detect any sign of life on admission. After an exsanguinating transfusion he looked better and ultimately recovered.

11. *Hæmorrhage.*—Transfusion a uniform success.

12. *Hæmophilia.*—Bleeding may be arrested by blood transfusion more than once in the same patient. Transfusion was successfully employed in five cases, but in three of them it had to be repeated.

13. *Secondary Anæmia.*—Clinical improvement often follows transfusion for anæmia due to chronic infection of the tonsils or kidneys. No improvement occurred in the anæmia of chronic endocarditis.

14. *Purpura.*—Temporary benefit followed transfusion in thrombocytopænic purpura, and it was a valuable preliminary to splenectomy in three cases. In hæmorrhagic purpura of uncertain type it was used three times with little benefit.

15. *Congenital Syphilis.*—Six children receiving the usual antiluetic treatment were transfused without apparent improvement.

Summary.

1. The transfusion of whole blood by means of glass syringes is an easy and successful operation which may be performed even on the newly born. 2. As a combatant of shock and a corrector of hæmorrhage it is a valuable routine adjunct to many operations of childhood. 3. It guards a newly-born child against the dangers of prematurity or hæmorrhage. 4. It may save the life of a child suffering from burns. 5. It is an aid to the treatment of the metabolic toxæmias of infancy.

In conclusion, I wish to express to Dr. W. Edward Gallie, the surgeon-in-chief, and to the other members of the surgical staff of the Hospital for Sick Children, Toronto, my gratitude for their instruction and for the opportunities they gave me of studying patients under their care and of inspecting the records. I wish also to thank Dr. C. F. W. Hames, the resident physician, for his help in assessing the results of transfusion on the metabolic toxæmias of infancy.

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A NOTE ON THE MICROSCOPIC APPEARANCES OF THE SPINAL CORD IN TETANUS.

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RECENT literature on the histology of the nervous system in tetanus reveals great diversity of opinion regarding the changes which are met with in the spinal cord in that disease. In none of the published cases have the posterior root ganglia been examined, and as I have found definite changes in these ganglia, I venture to publish this account of the histological appearances of the cord in a single case of tetanus.

Clinical History.—E. S., aged 16, was admitted to the Glasgow Royal Infirmary under the care of Mr. John Patrick on June 3rd, 1924. Sixteen days previously she had received a puncture wound on the sole of the left foot from a dirty nail out of a packing case. An abscess formed at the seat of injury, but resolved under treatment and appeared to be soundly healed. A fortnight later the patient felt stiff and her stiffness increased. On admission to hospital two days later a distinct but not marked risus sardonicus was present. The jaws were not separable by more than half an inch. The neck was rigid and there was rigidity of the arms with slight flexion at the elbow-joints. The body was very rigid and the normal lumbar curvature exaggerated. The legs were rigid, extended at the ankle-joints, and the feet arched. Occasional tremors affected the trunk and extremities, but were not sufficiently marked nor of long enough duration to constitute definite convulsions. Temperature 100° F., pulse 108, respirations 30. Antitetanic serum was given subcutaneously, intravenously, and intrathecally during her three days' residence in hospital, but the patient's condition did not improve. After the last administration of antitoxic serum, which was intrathecal, the patient complained of pain in the left leg and a frontal headache. Swallowing and articulation became difficult. There were occasional tremors and spasms and there was marked rigidity of the whole body. The temperature rose to 102·4°, pulse 158, respirations 50, before death, which took place on June 6th, the fifth day of the illness. So far as could be ascertained, the temperature during the last three days of life ranged from 100° to 102°.

Post-mortem Examination (June 6th).—Trismus was present. The face and neck showed marked post-mortem lividity. The right side of the heart was dilated and cloudy swelling of the whole myocardium was present. There was some fatty degeneration of the intima of the aorta and several punctiform hæmorrhages were present in the anterior mediastinum. The lungs showed subpleural hæmorrhages with extreme congestion of their substance, and the lower lobes were very œdematous. The liver was congested and exhibited marked cloudy swelling. Some unusually large patches of subcapsular fatty degeneration were evident. The spleen was larger than normal and congested. The kidneys showed congestion and cloudy swelling. On microscopical examination the wound revealed pyogenic granula-

tion tissue, but no organisms could be demonstrated. Cultures from the wound were not made. The thecal canal showed an apparent excess of cerebro-spinal fluid, but no definite changes were noted macroscopically in the spinal cord. Unfortunately, the brain was not kept.

The cord was fixed in alcohol. Sections were prepared by the paraffin process from the cervical, dorsal, lumbar, and sacral regions of the cord, and several of the spinal ganglia of the posterior roots were also examined, including those of the fifth lumbar and first sacral segments. The following staining methods were employed: (1) hæmalum and eosin; (2) Heidenhain's hæmatoxylin and Van Gieson; (3) acid hæmatoxylin; (4) toluidin blue for Nissl's bodies; and (5) Victoria blue for neuroglia (Anglade and Morel, Anderson's modification).

Microscopical Examination.—The vessels of the pia mater were congested, as also were some of the vessels between the bundles of nerves entering the spinal ganglia. There was dilatation and congestion of the vessels of the cord and hæmorrhages were seen, especially in the posterior columns. There was no perivascular infiltration and no overgrowth of neuroglia. Plasma cells were not present, and there was no degeneration of the tracts of the white matter.

The cells of the anterior horn showed various degrees of change. The number of cells was decreased, and of those remaining a few showed no pathological changes. In others there was complete chromatolysis with loss of granular material. Eccentricity of the nucleus was noted, but not to any great extent. Some of the cells were characterised by the deeply staining quality of their nucleoli. A marked feature was the lack of differentiation of the nucleolus and nucleus. The intranuclear network appeared homogeneous, staining uniformly with the cell protoplasm. These changes were present at all the levels examined.

The cells of Lockhart Clarke's column showed all degrees of change—e.g., eccentricity of nucleus and chromatolysis, but there was no apparent diminution in the number of the cells.

Cells of the Posterior Root Ganglia.—Normally in the spinal ganglion there are two types of cell: (1) large and faintly staining; (2) smaller and deeply staining. In the sections of the present case there seem to be a lack of internal differentiation of the substance in both types. The nucleolus could be distinguished with difficulty. The intranuclear network stained pink (stained with toluidin blue, counterstained eosin) or bluish, whereas the normal network shows little evidence of having taken up any stain. This change was more marked in some cells than in others. In some cases the nucleus was so swollen as to occupy the greater part of the cell, the cytoplasm being much shrunken. There seemed to be an excess of brown pigment in some of the cells (brown pigment was observed in the cells of the posterior root ganglia of a normal cord which was examined at the same time). These cells showed other degenerative changes—e.g., chromatolysis, vacuolation, and eccentricity of the nucleus. Neuronophagy was present but was not marked, and neither congestion nor hæmorrhage was noted.

Summary.—The chief changes found were in the nerve cells, both sensory and motor, and they were characterised by disintegration of the Nissl's bodies, pyknosis, shrinkage of the cell protoplasm, and eccentricity of nuclei. The presence of congestion and hæmorrhages was notable in the cord, but there was no round-celled infiltration or any change indicative of an inflammatory process.

Discussion.

The published accounts of the microscopical appearances of the cord in tetanus are conflicting. Some observers have found no changes or only congestion, whereas others have reported distinct lesions. Goldscheider and Flatau found an extreme diffuse chromatolysis of the ganglion cells and their observations were confirmed by Goebel. Westphal noted swelling of the nucleolus in a few cells in a single case.[1,2] In Hunter's series of three cases no changes were found in one case, while differences from the normal were found in the other two. Instead of triangular-shaped collections of deeper stained granules in the more faintly stained groundwork of the cells, the whole cytoplasm had a more or less uniform staining and showed none of this differentiation of its substance.[3] Charcot and Michaud described a subacute central myelitis and Bouchard a proliferation of neuroglia with pigmentation of the cells of the anterior horn. Rispal has described changes in the ganglion cells in his cases. Similar chromatolytic changes have been obtained in animal experiments.

There has been much controversy, also, respecting the significance of these lesions, whether they are to be assigned to the toxin or the tetanus bacillus or to the clinical manifestations of the toxæmia—e.g., convulsions which are believed to cause exhaustion of the ganglion cells, hyperpyrexia, &c.

The mode of diffusion of the toxin is also disputed. Marie and Morax, Meyer and Ransome [4] concluded from their work that the toxin passed up the axis-cylinders, which were reached from the motor end plates, and that maximal effects were obtained when the toxin was injected into a motor nerve and minimal effects when a sensory nerve was the site of injection. Teale and Embleton[5] concluded that the toxin also ascended to the central nervous system to a great extent by the way of the perineural lymphatics, and they found that the dorsal root ganglia had a definite filtering or blocking action for tetanus toxin.

In the case under discussion marked changes were found in the cells of the posterior root ganglia, in the cells of Lockhart Clarke's column, and in the cells of the anterior horn—namely, loss of differentiation of substance, chromatolysis, vacuolation, and eccentricity of nuclei. It is difficult to believe that this biochemical change is a sequel to the convulsions, since the sensory cells are affected as well as the motor cells and even more severely. While degenerative changes were observed in the ganglion cells throughout the cord, it is notable that the cells in the posterior root ganglion of the left fifth lumbar segment exhibited a perceptibly greater degree of degeneration than those of the other posterior root ganglia examined in the cervical and dorsal regions. This phenomenon admits of two explanations. On the one hand, the toxin might be transmitted by the nerve-fibres of the sensory root as well as by those of the motor root; or, on the other hand, diffusion of the toxin might proceed by the perineural lymphatics outwards from the cord, so as to injure the cells of the posterior root ganglion. In the latter case the maximal degree of injury in the posterior root ganglion of the fifth lumbar segment might be correlated with a maximal concentration of toxin at the level at which the toxin entered the cord.

These observations appear to warrant the deduction that the histological changes are attributable directly to the tetanus toxin and are not an expression of over-activity of the cells.

No evidence is available to indicate whether diffusion throughout the cord occurs by way of the lymphatic channels or by the axis-cylinders, but the initial symptom in the progress of the disease—viz., trismus, which is the result of the toxic process in the bulb, does prove that this diffusion proceeds rapidly.

I am indebted to Prof. John H. Teacher for the privilege of working under his supervision in the pathological department of the Infirmary, and to Mr. John Patrick for the opportunity of examining the spinal cord in this case and for the clinical history.

Bibliography.—1. Nouveau Traité de Médecine, Paris, 1924. 2. Archives of Neurology and Psychiatry, Enrique Barros; Zeitschr. f. d. Ges. Neurol. and Psychiatr., xciii., 720, November, 1924. 3. W. K. Hunter: The Microscopic Appearances of the Spinal Cord in Tetanus, Brit. Med. Jour. August 7th, 1897. 4. R. Muir and J. Ritchie: Manual of Bacteriology. 5. F. H. Teale and D. Embleton: Jour. of Pathology and Bacteriology, xxiii., 50–68.

ROYAL MEDICAL BENEVOLENT FUND.—The following are some additional cases relieved at the last meeting:—

Three children of M.D. Edin. who practised in Yorkshire and died in 1916. Only income £15 per annum; uncles contribute £100 per annum. They live with a grandmother and an aunt. The Fund has helped with the maintenance to the extent of £93 during the last eight years and voted a further £18.

Daughter, aged 67, of M.R.C.S. who practised in London and died in 1885. Applicant is the eighth daughter of 11 children and supported herself up to 1919 when, owing to the war, her employers went out of business. Unable to obtain another post, now lives with a married sister and helps in the house, but the sister can ill afford to keep her. Relieved three times, total £54; now voted £26 in 12 instalments.

M.D. Edin., aged 72. Is bedridden and supported by his brothers, but they are unable to do more and the Fund was approached for a grant for pocket-money. In 1925 the Fund voted £17 and now a grant of £18 in 12 instalments has been made.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters Symonds, at 11, Chandos-street, London, W. 1.

Clinical and Laboratory Notes.

MALIGNANT TUMOURS FOLLOWING ONE APPLICATION OF AN IRRITANT.

BY H. P. PICKERILL, C.B.E., M.D., CH.M. BIRM.,
SURGEON IN CHARGE OF THE FACIAL AND JAW DEPARTMENT, DUNEDIN HOSPITAL, NEW ZEALAND.

LAST year Dr. Marshall Findlay[1] recorded the results of some extremely interesting and apparently important experiments, demonstrating the experimental production of cancer by one application of tar. If these experiments are confirmed, as may be expected, they will have a most important bearing upon workmen's compensation cases. I was much struck by the fact that Dr. Findlay apparently could quote only two clinical cases where malignancy had resulted from the single application of an irritant. I feel sure there must be more. It is highly desirable that such cases should be published, and I therefore place on record the following three cases, which, during the last year, were referred to me for excision of facial growths and plastic restoration.

CASE 1.—A. B., man aged 45. Healthy, excellent physique. Showed a typical malignant ulcer of the lower lid of the left eye at the inner canthus. The history he gave, subsequently corroborated fully in the court and admitted as true by the judge, was that five months previously whilst at work on a dredge, a red-hot cinder burned him in the corner of his eye. The sore did not heal and gradually became larger. It was also established in the evidence that there was no lesion present in the eye before the burn. In March last year I removed the growth freely. The pathological report was as follows: "One edge of specimen shows masses of closely packed spindle-shaped cells in the subcutaneous tissue. Although there is a suggestion of cornification, the general structure is that of a rodent ulcer. It is a basal-celled carcinoma (rodent ulcer)."

The fact that there was cornification present raised some doubt as to whether it should not be classified as an epithelioma.

CASE 2.—C. D., man aged 43. Good health. Admitted complaining of a sore behind the right ear, which had been present for nearly two years and which had resulted from a burn from a lighted cigarette which he was carrying behind his ear. In September last year I removed half the ear and glands of the neck. The pathological report was as follows: "Tissue consists of masses and columns of squamous tumour cells, the masses showing central cornification. The stroma consists of loose fibro-cellular tissue heavily infiltrated with round cells. It is a squamous-celled carcinoma (epithelioma).

Obviously no compensation was involved in this case.

CASE 3.—E. F., man aged 65. Admitted in September last year. A large fungating growth of the upper lip about the size of a hen's egg. Patient gave a definite history that 15 years ago he was burned on his lip by a very hot pipe. The pipe (tobacco) had been resting on the side of a furnace when he took it up. Patient stated that the burn took a very long time to heal and there was always a lump on the inner surface of his lip, which started getting larger rapidly about six months ago. The lip and glands of neck were removed and the following pathological report was received: "The section of a piece of tissue from lip shows a papillomatous type of growth with much more surface cornification than downgrowth. The glands of right and left sides show no evidence of malignancy. It is a slowly growing malignancy supervening on a squamous papilloma of lip."

In Case 1, referred to above, the patient was unsuccessful in obtaining any compensation because at that time, here, we were unable to produce any evidence of malignancy having resulted from the application of a single irritant. I should imagine that were the case to be tried again now, the patient might be more successful.

It is interesting and perhaps significant to note that in each of these three cases there is a definite history of a burn, and that Dr. Findlay produced his cancers in mice by the single application of *hot* tar.

[1] THE LANCET, 1925, i., 714.

A CASE OF SURGICAL EMPHYSEMA IN SCARLET FEVER.

BY F. R. CURTIS, M.Sc., M.B., CH.B. LEEDS,
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AND
I. C. THOMSON, M.B., CH.B. ST. AND.,
ASSISTANT MEDICAL OFFICER, MANCHESTER FEVER HOSPITAL.

CASES of non-bacterial subcutaneous emphysema do not make a large chapter in medical literature. In 1919 Alexander and Follett[1] published a very complete survey of the condition with clinical instances. They mentioned cases due to trauma of the air-passages, nasal and frontal sinuses, &c., and later, in 1922, Rosenheim[2] recorded a case of traumatic surgical emphysema after tonsillectomy. But so far as we can find there seems to be no record of emphysema occurring during scarlatina.

The patient, a girl aged 6 years, was admitted on Dec. 10th, 1925, with a well-developed punctate erythema on the trunk and limbs. The tongue showed partial peeling, and the papillæ were prominent. The fauces were injected, the tonsils slightly enlarged and slimy, but no exudate was present. The cervical glands on both sides were somewhat enlarged. On the 11th the rash showed considerable blotchiness and staining. As the child's general condition was worse 20 c.cm. of antiscarlatinal serum were given. The tonsils and fauces now showed great ulceration and the cervical glands were larger, but no fluctuation could be detected. On the 12th to the 20th the child improved steadily in general health, though there was still considerable ulceration of the tonsils and enlargement of the cervical glands, especially at the left angle of the jaw. On the 21st, during routine examination, well-marked surgical emphysema was found, extending from the left mastoid process down the side of the neck on to the chest in front and behind, and spreading round the root of the neck to involve the right clavicular region. At this stage the throat showed marked erosive ulceration of the left tonsil spreading backwards on to the lateral pharyngeal wall. Sloughs were present in the pharynx, but no perforation was visible. Later the emphysema had extended to the left wrist and down the right side of the neck and chest. By midnight it was present over the whole trunk, being limited below by the iliac crests and Poupart's ligaments and above by the lower jaw, the mastoid processes, and superior curved occipital lines. On the 22nd both arms were involved as far as the wrists. Spread was taking place over the sacrum, but not over Poupart's ligament. There were no abnormal signs present in the chest, nor were there any alterations in the character of the respiration. A needle was inserted in the left infraclavicular region and much air escaped. In order to expel all the air, an incision was made under novocain, just in front of the left sterno-mastoid muscle at the level of the cricoid cartilage. The incision was deepened until air rushed out. The child was then bandaged tightly from below upwards. The wound was left open, protected only by a slight layer of sterile gauze as in tracheotomy cases. The child's general condition, which at first was fairly good, gradually became worse and death took place on the 24th.

Post-mortem Examination.—A dissection of the neck showed emphysema behind the platysma and superficial cervical fascia. The upper cervical glands were enlarged; one on the left side was breaking down. On the left side, too, there was a small collection of pus behind and below the posterior belly of the digastric, and passing behind the carotid sheath. The pus led to another small collection between the palatopharyngeus and the wall of the pharynx. In this situation, on a level with the junction of the tongue and epiglottis, was a small punched-out perforation one-tenth of an inch in diameter, lying in the centre of an ulcer behind the posterior faucial fold. No affection of the larynx was found. Unfortunately the pus was not examined, though clinically there was never any suggestion of gas-gangrene.

We are indebted to Dr. R. Veitch Clark, medical officer of health for Manchester, for permission to publish this case, which occurred at the Manchester Fever Hospital, Newton Heath.

[1] Alexander, M.E., and Follett, E.C.: Jour. Amer. Med. Assoc., Chicago, 1919, lxxii., 930–933.
[2] Rosenheim, S.: Amer. Otol., Rhinol., and Laryngol., St. Louis, 1922–23, xxxi., 1027–1031.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OBSTETRICS AND GYNÆCOLOGY.

THE MANCHESTER SCHOOL.

A MEETING of this Section was held on Oct. 15th, when Prof. A. DONALD delivered his presidential address, giving a Historical Survey of Obstetrics and Gynæcology in Manchester. St. Mary's Hospital, he said, was founded 136 years ago by Charles White, the author of a treatise which had revolutionised the treatment of puerperal fever. Other great names connected with the hospital were Charles Clay, a pioneer surgeon, the first to perform abdominal hysterectomy for fibroids; Charles Cullingworth, a great diagnostician who dispensed with the uterine sound; and William Sinclair, founder of the *Journal of Obstetrics and Gynæcology*. The teaching of the Manchester school had a certain individuality. It early supported the treatment of prolapse by a vaginal plastic operation. It believed in curettage for disturbed uterine function as manifested by disabling dysmenorrhœa, profuse leucorrhœa, &c. It regarded retroversion as the first stage of prolapse, treating it by vaginal operation and performing suspensory operations only when there was much pain, with enlargement, or sterility. It also made a practice of removing both ovaries in hysterectomy, as the result of experience and of statistical inquiry into the results of complete and partial operations.

Dr. WATTS EDEN proposed, and Dr. RUSSELL ANDREWS seconded, a vote of thanks to the President for his address.

Mr. VICTOR BONNEY read a paper on the outcome of 214 radical abdominal operations for

Carcinoma of the Cervix.

The operations in this series, he said, were performed between April, 1907, and October, 1921, and all had been followed up by letters or interviews. The removal had always been as drastic and radical as was compatible with recovery; the glands in the obturator fossæ and along the iliac veins were always taken away, and practically all the vagina. In most cases spinal and full ether anæsthesia was used. Many of these patients had been dismissed from hospitals as inoperable. The only contra-indications recognised were deep and extensive involvement of bladder, bowel, or both ureters. The only reliable grouping of cases was according to whether the regional lymphatic glands were or were not carcinomatous at the time of operation. Of the 214 patients, 121 had healthy glands and 93 had carcinomatous glands. The operability rate at the Middlesex and Chelsea Hospitals worked out at 63 per cent. up to 1910; this figure was retained in subsequent publications because after 1910 it was no longer possible to estimate the rate accurately. Probably in recent years it was more nearly 70 per cent.

Results.

The figures were :—

—	Five years later.	Seven years later.	Ten years later.
Died from—			
Operation ..	34 (15·8 %)	32	25
Recurrence ..	82 (62 %)	69	45
Other diseases ..	5	5	4
Lost sight of ..	8	20	20
Free from recurrence	85 (40 %)	56	36

Early recurrences usually took place in the pelvic cellular tissue, rectum, or bladder, or the upper end of the vagina if this had been left behind. Later recurrences were generally found in the tissue along the side wall of the pelvis and along the vessels or in the pelvic bones or vertebræ. Taking the operability rate as 63 per cent., then the 85 "five-year cures" represented a recovery rate of 25 per cent.—certainly an underestimate. Where the glands were carcinomatous the operative death-rate was 21 per cent., and the recurrences rose to 61 per cent. and occurred sooner. Nevertheless, it was encouraging to find that 23 patients with gland involvement remained healthy for five years at least. Five years had proved to be too short a time on which to claim a cure, and even seven years was not wholly sufficient, although it covered the vast proportion of recurrences, five of which became manifest between the sixth and seventh years. A "seven-year cure" was found to have been effected in 30 per cent., but this underestimated the successes, because 20 had by then been lost sight of. Where glands were carcinomatous only 29 per cent. remained well seven years after; but this implied that 17 individuals were well out of 76.

After Ten Years.—One hundred and thirty operations could be reviewed after a ten years' interval and showed an operative mortality of 19 per cent. and over 34 per cent. of "cures" among the survivors; 30 per cent. of these had had carcinomatous glands. Finally, a review of the whole series to-day brought out several new points: 57 patients were free from recurrence up to 18½ years, 32 of them having survived their operation ten years or more. The total number of known deaths from recurrence was 90—i.e., one-half of the number of those who recovered from the operation. The table was complicated by cases lost sight of, but an estimate of the chances of recurrence among these brought the number of "ten-year cures" up to 51. Thus slightly less than 50 per cent. of the patients who survived operation might be claimed as absolute cures. The chance of recurrence and cure in cases with carcinomatous glands was as two to one, and of those without gland involvement as two to three. The results of the radical operation might be calculated as follows :—

	Advanced group.	Moderately early group.
Operative deaths ..	20	10
Recurrences	54	36
Ten-year cures ..	26	54

The two groups could be further subdivided according to the degree of advancement, but the classes could not be distinguished clinically with any certainty. In reaching a prognosis every point had to be considered—e.g., age, physique, state of health, duration of pain and of bladder symptoms, motility of the cervix, involvement of vaginal wall and its situation if present, and duration of bleeding. The most reliable guides—where all might be fallacious—were pain, bleeding, and bladder symptoms. A useful rule was: three months' bleeding, growth certainly removable; six months' bleeding, possibly removable; 12 months' bleeding, most probably not removable.

Discussion.

Mr. CUTHBERT LOCKYER said he thought gynæcologists might become a little too optimistic if they based their conclusions on the statistics of an exceptional operator like Mr. Bonney alone. The good results of treatment by X rays and radium must also be taken into account and there was room for both. He himself would never do a Wertheim for advanced cases, since he believed better results were obtained by radium. He quoted the figures of American and Viennese workers, which he found very impressive. Moreover, the palliative results of radium and X rays had to be taken into account, the freedom from hæmorrhage, pain, and discharge which they ensured. He quoted a case of recurrence in the vault 15 years after operation.

Prof. FLETCHER SHAW recalled the early days of the Wertheim operation in this country and emphasised the debt of British gynæcology to Mr. Bonney and

Mr. Comyns Berkeley, who published their first series of results at a time when others were getting disheartened and might well have given up the method altogether. He himself had operated on 141 cases with a death-rate of 24 per cent. His operability rate was 57 per cent., but he did not regard this as a statistic of great significance; he operated on every case in which there was any chance of removing the growth because he believed the operation to be the one measure giving a chance of permanent cure. Pain was an important consideration; if there was pain the growth was usually irremovable. A very serious trouble was fat, and it seemed to be the fattest and healthiest-looking women who got carcinoma of the cervix. A very common cause of death was urinary infection, although shock accounted for the greatest number. He had found that almost all the recurrences took place in the first two years. Of his 42 cases with recurrence 21 occurred in the first year, 13 in the second, three in the third, one in the fourth, two in the fifth, one in the sixth, and one in the ninth year. If at the end of a year the patient was healthy, felt well, and had a good colour the chances were that she would do well. If she was flagging somewhat, without obvious recurrence, it was probable that she would develop a further growth during the ensuing 12 months. After five years he could trace 70 out of 75 patients who had survived operation; 15 (20 per cent.) had died and 28 (37·3 per cent.) had recurrences; two had died from other causes, one of tuberculous meningitis; 25 were alive and well (33·3 per cent.). After seven years 16 out of 50 were well (32 per cent.). The good results claimed for radium treatment were all from abroad and English figures came nowhere near them. Clinically, he had concluded that radium was not of much value, but on working out his statistics he found that 41 per cent. of those who were treated with radium before operation were alive and well, against 32 per cent. of those who had not had radium. He thought it was of great importance that workers should publish their figures for discussion.

Mr. L. C. RIVETT said that he had done 40 Wertheim operations in the last seven years; ten of the patients had died from the operation and three from urinary infection developed 10 to 12 weeks after leaving hospital apparently well. This infection was a very troublesome complication and did not seem to have any reference to bladder involvement by the growth. He agreed with Mr. Bonney's points for determining operability and that examination was most deceptive. If the growth was not removable he tied the internal iliacs, ovarian and uterine arteries and had often been surprised at the improvement following this measure. He thought that radium acted by producing a fibrosis which cut off the blood-supply, but the difficulty was to make the radium act on all parts of the growth.

Dr. RUSSELL ANDREWS said that few people did such an extensive operation on such difficult cases as Mr. Bonney or could equal his results. Prognosis was extremely difficult in any given case and he had often felt after operating that he had made a mistake, and yet found the patient alive and well five years later. Out of his first 100 he knew that 24 were well after seven years; most of them had been old or elderly when the disease arose. The most adverse symptom was long-continued pain. The cauliflower growth, not often seen nowadays, might lead to long-continued bleeding with little invasion of the cervix and so give an unexpectedly good result.

Mr. BONNEY, in reply, said that he did not agree that the success of the operation depended on dexterity; it was a matter of learning to do it properly—a full hysterectomy was no good at all. Workers who did not perform the extirpation completely might blame the method for their bad results. He could not make head or tail out of the foreign radium figures and preferred to disregard them until British figures were published in corroboration. The only definite standard of operability was to go for every case in which there was the slightest possibility of getting the growth out. He knew no way of preventing the urinary infection. Logically, if radium were to be used at all it should be on the early cases, since the late ones usually had glandular involvement. He had not cited pain as an important factor in determining the operability because in nine cases out of ten it meant that the growth had extended beyond the cervix and so was inoperable.

Prof. LOUISE MCILROY presented two short communications.

1. *Malignant Disease of Both Ovaries in a Girl of 18.*—The patient had had a severe attack of abdominal pain radiating from the right iliac fossa over the abdomen and had been getting thinner. On admission free fluid and two movable tumours were found, and the uterus was fixed. On operation the whole pelvic peritoneum was found densely studded with nodules which bled readily, and there was a tumour of each ovary; the appearance was characteristic of carcinoma. The tumours and all the ovarian tissue were removed: the patient recovered and had been seen several times since. She continued in good condition and menstruated regularly. The pelvis was still slightly tender, and the nodules in the peritoneum and some swelling around the uterus were still present. Pathologically, the tumours showed ambiguous characteristics, being probably a borderline growth between carcinoma and sarcoma.

2. *Endometrioma of the Ovary.*—The patient was a spinster aged 36, who complained of violent attacks of pain and sickness, which, she maintained, had no relation to the menstrual period. The right ovary was found on operation to be the size of a tangerine, cystic, and adherent. The left ovary and the tubes were healthy but congested. The right ovary was removed and the patient made a good recovery. The sections showed typical endometrial glandular tissue with no great invasion of the ovarian stroma.

The PRESIDENT referred to a patient with a similar apparently malignant growth who made a good recovery.

SECTION OF THERAPEUTICS AND PHARMACOLOGY.

AT a meeting of this Section held on Oct. 12th, Dr. GEORGE GRAHAM delivered his presidential address on the

TREATMENT OF GOUT.

He said that he had chosen this subject because there was an impression, often based on faulty diagnosis, that gout had become rare, because there had been great improvement in the treatment by drugs and because unpleasant symptoms sometimes followed the exhibition of cinchophen.

In *diagnosis* the presence of typical gouty attacks in other members of the family was a very valuable indication, as was also the history of the first attack, which was often typical although later ones were not. Gouty joints were nearly always asymmetrical, which dintinguished them from subacute infective arthritis. Tophi were helpful but inconstant. Since sodium biurate was deposited in the bones and was not opaque to X rays the skiagram in long-standing cases showed obvious clear areas, best seen in the small bones of the extremities. Identical changes were found in lupus pernio and similar ones in association with psoriasis. In old subacute infective arthritis there was a general loss of calcium, so that the shadow was not good, but there were no punched-out areas in it. The estimation of the uric acid in the blood might be a great help. It was raised in chronic nephritis with urea retention and in leukæmia, and might be high in people who had never had gout. Moreover, some patients with typical gout had no increase in blood uric acid, but on the whole a joint lesion combined with raised uric acid was probably gout. The uric acid content had been observed by Gudzent and Folin to increase when an attack was impending.

In *treatment of the acute attack* the first essential was rest for the affected limb, however slight the pain. Local applications such as lotio plumbi gave relief.

The best drug was colchicum taken in large doses as soon as the attack began (vinum ℥ xv.–xx. every four or eight hours, or colchicine 1/100–1/32 gr.). The mode of action of colchicum was not yet understood and it would not prevent attacks. Unpleasant symptoms resulting from its use varied from pain after meals, malaise, and headache to severe dyspepsia and diarrhœa. The cinchophen group was also of value.

In *prevention of the attack* diet played a great part. All foods containing much nucleo-protein must be avoided—gland-organs, beef, &c. The total protein must not exceed 60–80 g. daily (10–12 g. nitrogen). Sugar, tea, and coffee used to be forbidden, but were now usually permitted. Alcohol undoubtedly played some part in causing gout, and Widal and others had found that gouty patients often gave skin reactions to certain wines, especially red Burgundy. Port did not give skin reactions, although in this country it was considered, together with beer and champagne, to be a potent exciter of gout. General health must be maintained and all sources of sepsis removed. The most valuable preventive drug was cinchophen, a derivative of quinoline, sold under various proprietary names (atophan, agotan, phenoquin, quinophan). This caused a great increase in the output of uric acid, even in healthy persons; some thought it did this by increasing the purin metabolism, others by stimulating the kidney. Experiments showed that the uric acid began to reaccumulate in the blood as soon as the drug was stopped, although the output continued good. There was no evidence for increased formation, so the accumulation was probably derived from the sodium biurate deposited in the tissues. The experiments of Folin and of the speaker seemed to show that the extra uric acid excreted came first from the blood and tissues and then from the biurate stores in the body. Whatever the opinion held on the relationship of uric acid to gout, these stores could not be good for the patient. Another observation showed that cinchophen only caused an increase in output for the first two or three days, so that the best régime of administration was three-day periods with intervals. Most patients treated in this way had no more acute attacks, and their local condition improved immensely. Sodium salicylate and sodium benzoate also caused an increase in the excretion of uric acid, but 100 gr. a day of sodium salicylate produced noticeable effects on the patient, whereas cinchophen usually did not. Cinchophen also relieved the pain of acute rheumatism and infective arthritis, and its effect on the liver made it useful in catarrhal jaundice and icterus neonatorum. Its action in causing an increase in the volume of the bile, in the total dry solids, and in the pigment matter was only approached by that of desoxycholic acid.

Death following Cinchophen.—Several deaths had been recently reported from jaundice following a course of cinchophen. Investigation showed that the preparation and dosage had varied, but that in every case the drug had been given without intermissions. In some instances early signs of disturbance passed unnoticed. The speaker had tested the uric acid in the blood, the blood-sugar, and the liver function (lævulose test) in three patients who had been taking large quantities of cinchophen for some time, and proposed to examine its effects on normal people. One of his patients showed some sign of liver damage, and appeared to be taking more cinchophen than she really needed; the dose was, therefore, reduced to 15 gr. a day for two consecutive days in each week. He would be loth to give up the drug, since it gave such excellent results, but recommended that it be used mainly for gout, that it should never be given for more than four days without an intermission of at least four days, and that the blood uric acid should be estimated at intervals of six months and the dose reduced if the test showed a normal quantity. Possibly, also, a guide to delayed excretion might be given by testing the urine, which gave a green colour with weak hydrochloric acid in the presence of cinchophen.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

HEALTH ADMINISTRATION.

IN his presidential address delivered to the Society on Oct. 15th Dr. E. H. SNELL, medical officer of health for the city of Coventry, sketched the growth of health administration in this country, some of its anomalies and some of its obvious deficiencies. Health administration, he said, generally lagged behind preventive medicine, and was dependent, of course, on many other factors than those introduced by administrative officers. The Local Government Board, even when it became the department of Government concerned with the administration of the Public Health Act, found that its powers were of a limited character; it could only bring indirect pressure on a local authority that was slow in following its advice. One of the Board's most powerful levers, however, for moving local authorities, was by means of reports of inspectors. On the occurrence of an outbreak of illness or for various other excuses, an inspector was sent to the district to report on its sanitary administration; it was always a comparatively easy matter (especially with that wisdom which comes after an event) for an inspector to write a report reflecting on the negligence of the local council or its officers, or both. These reports were printed, and being of local interest found a good press in the local papers. It must be admitted that this system of reports worked well, though its effects were necessarily sporadic and often slow.

The latter part of Dr. Snell's address was devoted to the scope of health administration and the use of health propaganda.

Scope of Health Administration.

In the early days of the last half century, said Dr. Snell, efforts were directed mainly to the removal of gross nuisances causing noxious effluvia; the working of the Public Health Act specified the kind of nuisance a local authority could deal with, and its meaning had since been stretched to cover many conditions not originally contemplated by its promoters. The officer to carry out these duties was dubbed "inspector of nuisances," a name long since replaced by the title of "sanitary inspector." A healthy environment was sought by obtaining the proper removal of sewage, disposal of refuse, pure water-supply, healthy housing conditions, and so forth. It was possible to cleanse compulsorily a verminous house, but not the verminous person who infected the house. An early infringement of personal liberty in health matters was the penalty on exposing an infectious person in a public place and his compulsory removal to hospital. The local authority thus became responsible for his treatment. The Public Health Act gave local authorities power to build and maintain hospitals for the sick poor of their district on obtaining the sanction of the Local Government Board. The power was not limited to fever hospitals, but in practice sanction was not sought to construct any others, though for many years there had been a small municipal hospital for accidents at Barry, and more recently the Poor-law infirmary at Bradford had been converted into a municipal hospital.

In the course of time the close association of the cure of disease with its prevention became appreciated. The medical inspection of school-children was made compulsory 18 years ago, and it was inevitable that this should be followed by provision for treatment. The commonest ailments of children were provided for, and now in most areas some provision existed for dealing with eye and throat defects, dental disease, and certain skin diseases. Then certain of the more progressive of the local authorities started providing sanatorium beds for tuberculosis; a great fillip to this movement was given by the passing of the National Health Insurance Act of 1911, and sub-

sequently it became the duty of counties and county boroughs to make this provision both for insured and uninsured. Since then the *duty* has been imposed on these bodies to draw up schemes for the free treatment of venereal diseases. And the Maternity and Child Welfare Act of 1918 gave the *power* to these bodies to make provision for caring for the health and welfare of nursing and expectant mothers, and children below school age. It was curious to note that nothing in this Act was compulsory beyond the duty of forming a maternity and child welfare committee; that committee once formed need never meet, yet the Act would have been complied with. In practice, however, many if not most, authorities had already done much in this direction by the appointment of health visitors.

The cure and prevention of illness was so intimately related that, said Dr. Snell, it seemed inevitable that in the future the ordinary medical curriculum would have to cover both. State services relating to both were represented in the Ministry of Health. And even the method of payment of the insurance practitioner was such that the more successful he was in averting illness from his patients the less work he had to do. Much good work was possible from the practising medical profession if they would cultivate the spirit both of curative and preventive medicine. Curative medicine made a strong appeal to the charitable. Sympathy with the sufferer was natural. But this had the effect of making sanatoriums and hospitals the shop windows of public health, whereas they were merely the backwaters.

Health Propaganda.

It could not be said that nothing has hitherto been done by health authorities in regard to propaganda; but now, for the first time, this form of activity became statutorily one of the powers of local authorities. "It behoves us," said Dr. Snell, "as the responsible medical advisers of local authorities, to endeavour to see that such powers are used with due circumspection. The object in view is the prevention of illness. This can probably be best obtained by the avoidance of sensationalism, fads, and stunts. Let *our* advice be sound and founded on proved facts, or let it be nothing at all. We now know that the same methods of prevention cannot be applied to all diseases that can be classified as infectious. Isolation and disinfection were once regarded as the panacea for all infectious diseases. And probably most of us are familiar with circulars containing advice as to how to avoid this, that, or the other disease, the only value of which has been to the printer who printed them. It may appear harmless to advise good food, exercise, open air, and sanitary houses as assisting the combating of infection. But it is not altogether true. We now know that those children living under the least sanitary conditions are the least prone to contract diphtheria. Also such advice is founded on guesswork rather than on any evidence of its truth. The last published annual report of the Chief Medical Officer of the Ministry of Health casts doubt on its value in the case of influenza. After giving particulars concerning an outbreak of influenza in a school, it concludes by saying, 'The report is interesting as an illustration of our helplessness in controlling the spread of influenza, even in school, where the boys are given every care and attention, and where they live in what appear to be ideal hygienic conditions.'

"Take the case of encephalitis lethargica. Now that its signs, symptoms, and sequelæ are becoming recognised better, this disease looms largely on our horizon of fatal and malevolent maladies. But of its prevention we know practically nothing. A circular regarding its prevention would be as useful as one on the avoidance of thunderbolts. We have reason to believe that the regular evacuation of the contents of the large intestine is of enormous and even incalculable advantage to the individual. Let us say so. But it is not necessary for us to assert that cancer will be hereby avoided, or to endeavour to prescribe a diet which will eliminate all risks of this fatal malady. Such statements—for which there is not one iota of evidence—we can well leave to those voluntary societies who are willing to make them. I desire to draw a dividing line between responsibility and irresponsibility. We now have some definite and positive information regarding the obtaining of immunity to diphtheria and possibly also to scarlet fever. We have had even *more* positive evidence regarding the prevention of small-pox for over 100 years. We cannot claim any marked success regarding the propaganda work undertaken in that behalf. We have to recognise that there is an antagonism to propaganda work both passive and active. It is easy to arrange lectures; it is difficult to provide audiences. Even wireless broadcasting has its limits; educative lectures are turned off as relentlessly as most of us turn off jazz music."

Dr. Snell concluded with the regretful admission that our knowledge of preventive medicine is not sufficiently reflected and utilised in our administrative procedures. This was largely due to the want of exact knowledge among legislators, and the fact that political expediency was too often allowed to govern legislative enactments.

HUNTERIAN SOCIETY.

A MEETING of this Society was held on Oct. 18th, when Mr. MORTIMER WOOLF delivered his presidential address on

PAIN.

Although, he said, the fear of pain was often a deterrent, pain itself was the predominant symptom for which the majority of patients sought medical advice. Since the work of Hilton discussion had centred on the site of origin of pain, especially in the abdomen, the question being: Is visceral pain felt locally, or on the parietes of the body remote from its origin, or both? Mr. Wilfred Trotter considered that the pain nerves were those which ended or commenced in the tissues by means of nerve-fibres deprived of their neurilemma—i.e., that the ends of the nerves were uninsulated; he thought that arborisation of these uninsulated nerve-fibres formed an end-organ for the pain nerve. That a nerve termination of this nature was capable of producing pain could not be gainsaid; but, though pain could be produced by an uninsulated nerve-fibre, it need not follow that this was the only mechanism for the production of painful sensations; a blow on the ulnar nerve gave a very definite sensation of pain in the distribution of that nerve, although the area of the nerve stimulated was well insulated. These so-called "end-organs" for pain seemed to be in an entirely different category from those existing in connexion with the ordinary sensations such as touch, sight, and hearing. The paths of deep sensibility and localisation had been well worked out, but pain was different. It seemed almost universally connected with all sensations, and the President thought that it was nothing more nor less than a hyper-stimulation of a normal and specific sensation. Pinprick, heat, and light might all elicit pain if the stimulus was increased.

To the surgeon, he continued, there was one sensation of particular interest—namely, the sensation produced by the physiological contraction of muscles. The body was dependent on the tension of the muscles for a sense of the position of joints, and if this tension was excessive or abnormal, pain was produced owing to the hyperstimulation of a normal sensation. This seemed to be the explanation of Sir James Mackenzie's view that in acute abdominal disease the muscular layer was usually more hyperalgesic than the cutaneous tissues. In the viscero-motor reflex, where the abdominal muscles were held tense in order to protect an underlying diseased focus, it was, he thought, the tension of the muscles that made them painful. Pain after abdominal operation was largely muscular in origin, and, to a large degree, was situated

in the abdominal wall itself. The pro-peritoneal layer of fat was probably very sensitive, and to some extent this accounted for post-operative pain; but the muscular layer was the chief culprit. If this was true it was wise, if possible, not to sever or split the muscles but to draw them aside. If sutures were put into the aponeurotic sheaths rather than the muscles themselves, the patient seemed to suffer less pain.

The definition of pain as a hyperstimulation of normal sensation, continued the President, applied also to involuntary muscles. At the present time one school of thought believed that all abdominal pain was referred and could not be felt nor even produced in situ. Another school held that there was one form of abdominal pain produced and felt in situ, and caused by intravisceral changes of tension. Sensations were only present when they were of physiological use, and pain, heat, and cold all had a definite purposive physiology, whilst muscles conveyed the sensation of localisation. In hollow viscera there was no necessity for the sensations of heat, cold, touch, or, with very few exceptions, localisation; but there was a very real need that the intestines should be constantly kept informed of their state of tension. The purposive physiological sensation of the alimentary tract was the state of tension of its involuntary muscle, and when, for any reason, this became abnormal pain was produced locally, and, he believed, not uncommonly felt locally. It had been said that abdominal pain was due to tension on the mesentery, and that when the intestine dilated the mesenteries were pulled on, the nerves in them stimulated, and pain produced. The President very much doubted whether this was true. In colostomy the meso-sigmoid was stretched but the operation was not painful. The pain caused by sequestration of a part of the gut was probably caused by the secretion of gas, which over-stimulated the involuntary muscle surrounding it. This kind of pain, due to alteration of tension—e.g., in hernia or appendicitis—could often be localised fairly accurately, the patient placing his finger at the site of the lesion. On two occasions the President had been able to alter the intra-intestinal tension by inserting a plug, and on each occasion produced pain.

In conclusion, the President said that he believed that there was a form of abdominal pain produced and felt locally, and that abdominal pain could be produced by, at all events, one mechanism which made it comparable to pain elsewhere in the body—namely, by hyper-stimulation of a normal and specific sensation.

Discussion.

Dr. D. A. COLES inquired what was the most reliable sign of pain and how it was to be measured.

Dr. CAMPBELL MCCLURE pointed out that if an elastic bag in the rectum was rapidly inflated it caused pain referred to the sacral area and over the pubes. He thought that the facts did not support the idea that pain was an exaggeration of normal sensation.

Dr. J. A. RYLE considered that there was something in the view that pain represented an exaggeration of normal sensation, although this was contested by neurologists. It was a familiar experience that every grade of sensation existed in the stomach and bladder, for example. He believed that an increase in the tension of muscle-fibre—especially when rapid—or simply its failure to relax, was the cause of pain in a viscus. Distension, however, might exist without any pain, whilst the most severe biliary colic occurred without distension of the gall-bladder. He thought that the same argument applied to arterial pain—e.g., intermittent claudication—for which, he said, angina cruris would be a better name since the condition was analogous to angina pectoris and abdominis. From some cause—such as arterial disease, toxins, tobacco, or nervous unrest—the artery was unable to relax to adapt its posture. The mechanism was the same in all cases—an increase in visceral pressure with inability to relax. General practitioners, said Dr. Ryle, had a great opportunity for registering a series of observations on pain, and these would be of great diagnostic and practical importance. Such work could not be done in the laboratory or with animals. He believed that referred pains depended upon inflammatory changes, a different stimulus to that which caused visceral pain. The referred pains—e.g., those due to irritation of nerve-endings in a damaged organ—might persist for days after a visceral pain had subsided. It was important to observe also the gesture which accompanied visceral pain and which often localised it with great accuracy.

Dr. F. G. CROOKSHANK supported the theory that pain was an exaggeration of a normal stimulus. He said that dissociation of gas from the capillaries in the wall of a viscus certainly caused a visceral distension and was analogous to what happened in the swim-bladder of fishes.

Dr. E. P. POULTON cited the cornea, in which, he said, pain was the only sensation and was conveyed by uninsulated fibres. The pain of gastric ulcer was not located in the ulcer but in the viscus. He thought that burning pain signified that muscles were continuously on the stretch; the pain of angina was due partly to stretching of the heart muscle.

Dr. DAVID BARCROFT threw doubt on the existence of pain in many cases. It often persisted long after its cause had gone away.

Dr. HOWARD HUMPHRIS said that he had believed for many years that pain was due to pressure and that the best treatment was the relief of that pressure.

Dr. BRANSBY YULE said that he had often found that œsophageal pain was localised to the lesion. Muscle was often in a state of contraction; it was hypertetanic contraction that meant pain.

Dr. H. A. ELLIS said that he believed that pain was the overflow of central disturbance caused by local irritation.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.

A MEETING of this Society was held on Oct. 7th, when the President, Dr. E. RIVAZ HUNT, gave his presidential address on

Cholecystitis.

Dr. Hunt said that, according to Dr. Arthur Hurst, cholecystitis is the most common of all chronic abdominal disorders, probably occurring in at least 20 per cent. of all persons. It is probable that if practitioners were more definitely on the look-out for this condition many attacks of biliousness, indigestion, flatulence, or even of that much-abused term "influenza," could be attributed to cholecystitis. Gall-stones, which are found post mortem in at least 10 per cent. of all persons dying after the age of 20, are probably nearly always secondary to cholecystitis which may have resolved long before. He emphasised the importance of recognising this disease as a focus of chronic sepsis.

Dr. Hunt reviewed briefly the anatomy and physiology and pathology of the gall-bladder, and then described the symptomatology of cholecystitis. The onset was usually gradual, and as a rule there was little if any pyrexia, except at intervals when short attacks of a characteristic type might occur. Flatulent dyspepsia was the most prominent symptom, usually coming on immediately after meals, though when associated with reflex hyperchlorhydria it simulated the hunger-pain of duodenal ulcer, beginning two or more hours after a meal, and being then relieved by food, alkalis, or vomiting. Vomiting was uncommon, but nausea frequently present, and often some irregularity of the bowels. Jaundice was not a marked feature. The pain of cholecystitis was not infrequently a recurrent gastric pain, often worse at night; owing

to the close association of the centres in the spinal cord innervating the stomach, liver, and gall-bladder, the irritable focus in the cord might not be necessarily due to a gastric lesion, but might arise from disease of a neighbouring organ. Viscerosensory accompaniments of cholecystitis included superficial and deep soreness in the right upper gradient of the abdomen, right subscapular and interscapular pains, and tenderness over the middle dorsal spines and along the course of the eleventh right rib. In some cases of cholecystitis in which the gall-bladder was situated abnormally high up the inflammation of the gall-bladder might extend to the under surface of the diaphragm, giving rise to many of the signs and symptoms of subphrenic abscess, and might even masquerade as a pulmonary affection with slight dullness at the base of the right lung, râles, and slight pyrexia.

Dr. Hunt described various methods of demonstrating gall-bladder tenderness, and considered the differential diagnosis of an enlarged gall-bladder. He emphasised the importance of remembering that such newer methods should be considered as accessory only and not as short-cuts to diagnosis to the exclusion of the older and simpler methods. The treatment of acute cholecystitis was surgical. The treatment of chronic cholecystitis might be broadly divided into two classes: (1) Cases in which secondary complications, such as gall-stones or evidence of secondary septic troubles elsewhere are present. For these operation is the ideal course. (2) Cases in which secondary complications are absent or in which operation is declined or for some other reason is inadvisable. For these medical treatment may be first tried. An important point was the removal of any primary focus from which infection may be conveyed to the gall-bladder. Oral sepsis, tonsillitis, infection of the accessory nasal sinuses, chronic appendicitis, pelvic infections in women, and *Bacillus coli* infections must be looked for and treated. An attempt must be made to treat the gall-bladder infection by means of biliary antiseptics and provision of adequate drainage. Large doses of urotropine, combined with alkalis, given in the manner advocated by Dr. Hurst, may be used, or the same drug, combined with cholic acid, as in felamine tablets, is sometimes efficacious. Salicylates or aspirin in large and regular doses have been advocated. Magnesium sulphate in concentrated solution by the mouth promotes biliary drainage.

Dr. Hunt insisted on the importance of exercise, especially horse-riding and rowing. The diet should be carefully supervised so as to avoid or restrict those articles of food which contain or produce cholesterol.

Dr. Hunt concluded his paper by giving a brief description of cases illustrating points referred to.

DONCASTER INFIRMARY.—The Prince of Wales, on Oct. 12th, visited Doncaster primarily for the purpose of laying the foundation-stone of the new wards at the Royal Infirmary, which will be associated with the memory of Queen Alexandra. Since the infirmary was founded in 1868 the population has risen from 18,000 to 200,000. The number of beds in the new building will eventually be 600, and of the £110,000 immediately required for the new wards £48,000 has already been subscribed. It is hoped that much of the remaining sum needed will be contributed by the Miners' Association when work in the pits is resumed.

DONATIONS AND BEQUESTS.—Mr. Frederick Lewis Brandon Siddons, of Hanger Hill, near Ealing, and formerly of Calcutta, besides other bequests left £700 each to King Edward VII. Hospital, Ealing, St. Dunstan's Hostel for the Blind, the Hospital for Sick Children, Great Ormond-street; to Bedford Grammar School for the benefit of the school, and £700 for the upkeep of the panel in the school chapel in memory of his three sons.—King Edward's Hospital Fund for London has received a gift of £10,000 sent by Mr. Albert W. Searle.—Under the will of the late Mr. A. B. Bosher, of Tunbridge Wells, some £265,000 will be divided between the Lord Mayor and Corporation of London and the Mayor and Corporation of Sheffield for allocation to hospital charities within their respective areas.

Reviews and Notices of Books.

EVOLUTION.

Nomogenesis or Evolution determined by Law. By LEO S. BERG, Chief of the Bureau of Applied Ichthyology, and Professor of Geography in the University of Leningrad. With an introduction by D'ARCY THOMPSON. Translated by J. N. ROSTOVTSOW. London: Constable and Co. 1926. Pp. 477. 28*s*.

LUCK, cunning or law? To Darwin it was the good fortune of happening on a variant which suited the surroundings and had a survival value in getting through the sieve of natural selection. To Samuel Butler it was the ingenuity of learning what had happened to one's ancestors and storing it in an unconscious memory. To Dr. Berg the live world in its course of evolution is carrying out a predetermined plan controlled by laws as definite as those which keep the developing individual in the proper path. He brings abundant experience as a naturalist and an extraordinary wealth of learning to enforce his arguments for orthogenesis on the one hand, and for the direct influence of environment on the other. An evolutionary series is comparable to an individual—simple and small to begin with, growing progressively larger and more complex as it progresses, and finally reaching extinction in some gigantic gerontic form. Palæontology apparently contains abundant examples of the process, and if we interpret them as evidence of predestined courses, inherent in each animal and plant, it is obvious that our common views on evolution need modification. So, too, Dr. Berg attributes the similarity of animals of diverse groups living in the same environment to something deeper than chance variation. He is, in short, rather heretical, and he has written a most refreshing independent attempt to make out just where we stand in evolutionary matters. Prof. D'Arcy Thompson's introduction is delightful.

GOULD'S MEDICAL DICTIONARY.

By G. M. GOULD, A.M., M.D. Edited by R. J. E. SCOTT, M.A., B.C.L., M.D. London: H. K. Lewis and Co., Ltd. 1926. With illustrations. Pp. xi. + 1398. 30*s*.

THE first of Dr. George M. Gould's dictionaries was published in 1890, and in various forms they have had a large circulation ever since. The latest appears under the new title of "Gould's Medical Dictionary," edited by Dr. R. J. E. Scott, and has definitions of some 76,000 words. In a preface to one of his earlier volumes Dr. Gould referred to the medical vocabulary as a "strange hodge-podge of the medical language of two or more thousand years and of many special national tongues, in mechanic, not chemic mixture, with modern sounds and symbols, the whole amazingly heterogeneous and cacophonous," and it is alarming to find that the reviser of this dictionary has had to add another 5000 "legitimate new terms" to his collection. The lexicographer's position is difficult because it is his duty to interpret all the words which his readers may come across, and he has little chance of purifying them in the fire of his philological enthusiasm. Before his comments can appear the worst words are already on a thousand lips, and though the mortality amongst scientific terms is high their deaths are generally caused only by overcrowding due to the delivery of others worse than themselves. Dr. Scott remarks incidentally that no name should be changed simply because it is inappropriate; its suitability should be canvassed thoroughly before it is applied—a custom which would save much of the confusion of modern medical terminology. Only thus can be checked the growth of what Dr. Gould rightly calls the "huge and unassimilated philologic mass, many times greater than it should be, the despair of medical students and of the makers of dictionaries."

Attention is drawn to the steadily increasing use of proper names, legitimate and otherwise. Where these

are attached, for instance, to operations which have represented a real advance in method, their employment may be justified and of historical value. But the multitude of names used in medicine is so great that it is hopeless to try to remember more than a few.

This dictionary is unusual in giving pictures of many medical authorities of various centuries and countries, a custom which will be acceptable to some readers, but not to others. It is well produced and not very large considering the immense amount of information given. But a glance down the pages, filled with such words as "archocolpocystosyrinx" (more commonly known as recto-vesico-vaginal fistula), may well make the reader wish for an international Academy, which should quietly take such useless words away and give them decent burial. It ought to be possible in this way to reduce the medical vocabulary by half, and no one would be more thankful than the compilers of dictionaries.

THE HOUSE SURGEON'S VADE MECUM.

Second edition. By RUSSELL HOWARD, C.B.E., M.B., M.S. Lond., F.R.C.S. Eng., Surgeon to the London Hospital; and ALAN PERRY, M.B., M.S. Lond., F.R.C.S. Eng., Assistant Surgeon to the Hospital. Revised and enlarged. London: Edward Arnold and Co. 1926. Pp. 520. 12*s.* 6*d.*

IN the preparation of the second edition of his popular book, which first appeared in 1911, Mr. Russell Howard has had the help of Mr. Alan Perry. The book has been extensively revised. Among other improvements is the introduction of many excellent photographs illustrating various splints and appliances for the treatment of fractures. The chapter on anæsthetics has been revised by Dr. Ashley Daly and a very useful medico-legal chapter has been brought up to date; throughout this chapter the use of the term "municipal hospital" for rate-aided institutions prevents confusion. This handbook should prove useful not only to dressers and residents in hospitals, but also to those practitioners who have not had the advantage of holding the post of house surgeon in a big hospital.

INTESTINAL INFECTIONS.

Les Enteropathies Microbiennes. By Prof. G. SANARELLI, Directeur de l'Institut d'Hygiène de l'Université de Rome. Paris: Masson et Cie. 1926. Pp. 227. 3*s.* 4*d.*

IN this suggestive volume Prof. Sanarelli summarises the results of a lifetime of bacteriological study. To him perhaps more than to anyone else we owe the modern conception of typhoid infections as general diseases with elective localisation of the organisms in the small intestine rather than as primary infections of the small intestines with general symptoms. As he himself expresses it, "typhoid fever is no more a disease of the intestine than small-pox is a skin disease." These views have to some extent been popularised by the investigations of Besredka and his pupils, and some part of the present volume is occupied by discussions of priority of investigation, but the bulk of the work deals with the general pathology of typhoid, cholera, and anthrax, and the reader will here find a store of interesting records. An excellent bibliography is included.

HÆMATOLOGY.

Pernicious Anæmia, Leucæmia, and Aplastic Anæmia. An Investigation from the Comparative Pathology and Embryological Point of View. By J. P. MCGOWAN, M.A., M.D., Pathologist to the Rowett Research Institute, Aberdeen. London: H. K. Lewis and Co. 1926. With 12 illustrations. Pp. 116. 7*s.* 6*d.*

STARTING from his investigations of the leucosis of fowls, on which Ellermann and others have written a good deal, and of the curious anæmia of suckling pigs, which may be cured by adding iron to the diet of the mother, Dr. McGowan has added another to the long list of books which try to make out the genealogy and relationships of the fascinating cells of the blood and bone-marrow. This central idea is that the stem cells from which red cells and leucocytes arise may be stimulated in a variety of ways so that elementary forms of one grade or another appear in the marrow in abnormal numbers and overflow into the circulating blood. In this way he finds a common basis for perversions such as pernicious anæmia and leukæmia which in their fully developed forms appear as sufficiently distinct diseases. Dr. McGowan's discussion is full of interest and his facts mostly come from an abundant personal experience. His propositions and conclusions are not always proved beyond doubt; but, which is perhaps better, they are put forward in a vigorous and stimulating way and will give his readers some fresh ideas.

PRACTICAL ULTRA-VIOLET LIGHT THERAPY.

A Handbook for the Use of Medical Practitioners. By T. CLYDE MCKENZIE, M.B., Ch.B., and A. A. KING. London: Ernest Benn. 1926. Pp. 108. 6*s.*

THIS excellent little book has evidently been written by those who have themselves studied the subject and who know how to hand on really useful information. It is not a treatise but a practical manual written for doctors who want to use this form of therapy. Certain parts of the subject, as, for instance, the technique of open arc lamps, are hardly touched; this is perhaps a pity, but if it is assumed from the outset that the scope of the book is limited to the authors' own experiences, the reader will suffer no disappointment and will find much useful information on technique and on treatment. They will also find that the authors have a theory to account for the action of ultra-violet radiation on the body; they suggest that it acts upon and through the nervous system. They make out a very good case for their theory that these rays have an effect upon the nervous system, but we are no more inclined to believe that the whole sequelæ to irradiation arise in this way than we are to accept the photo-electric theory or that which imputes to the blood stream the chief part in these complicated processes. Perhaps hardly enough facts are yet known to warrant adhesion to any single theory; but that is no reason to refrain from formulating suggestions, for these point to further experiment, which, in turn, may reveal the weaknesses of the theories which inspired them, while stimulating progress in another direction.

"OVER FRAYS."

An Original House for Practical People. By CLARICE H. M. NAYLOR-DAVIDSON. Uxbridge: Printed privately for the author. 1926. With photographs, plans, and other illustrations by the author. Pp. 66. 21*s.*

Mrs. Davidson, the wife of a medical man who has retired from practice, being impressed with the necessity of having a house which, while eminently sanitary, shall be capable of being run without domestic assistance, describes in this book such a house which she herself has designed. In construction it is a brick parallelogram 68 ft. by 24 ft., and has two stories and an attic in the roof. The long sides of the parallelogram face nearly east and west—i.e., slightly south of east and north of west. All the sitting-rooms have windows opposite one another on the S.E. and N.W. sides respectively and so has one bedroom. The chief feature of the house is the kitchen which opens straight out of the dining-room with sliding doors in between. The cooking-stove is a gas stove, also fitted with a hot-water circulator, and besides its own flue there is a cast iron canopy over the stove fitted with a ventilator opening into the chimney flue, all smell being thus carried away. In all the rooms the walls meet the floor with a curved skirting, making dust easily removable. The fireplaces in all the rooms are arranged for gas, but they are constructed in two halves, so that by a swinging arrangement on either side an ordinary grate

is exposed which can be used for wood or coal. The walls of the house are double, with an air space between, thus avoiding damp, and the house is warmed by hot-water radiators. Cupboards built into the walls are plentiful and all bedrooms are fitted with wash-hand basins fixed and supplied with hot and cold water from taps. A small greenhouse in which is the hot-water cylinder opens out of the kitchen at one end of the house, and at the other end the garage adjoins the drawing-room. In every way the house bears out its designer's description as being one for practical people.

BOOKS FOR NURSES.

Hints to Probationer Nurses in Mental Hospitals. Second edition. By RICHARD EAGER, O.B.E., M.D. Aberd. London: H. K. Lewis and Co. 1926. Pp. 88. 1*s.* 6*d.*

THIS little book fills a real need and will appeal to the earnest probationer who seeks practical guidance and theoretical interest in mental nursing. It fulfils admirably its aim—that of putting in clear and simple language the essential points a nurse should know immediately on entering a mental hospital; it gives such an account of the mind, its working, and manifestations in conduct as will enable her to perform her duties with an intelligent understanding of mental disorder. Of the 88 pages 38 are given to practical hints, while 50 deal with psychology; an increase of the first part would be an improvement in order that rudimentary facts about the handling of patients might be more fully discussed. The book begins admirably with the essential maxim: "Never take offence at a patient," and the last maxim reads: "Never let a patient suffer because he is unable to complain." The rules given are wholly suited to the probationer. The section on ward duties might usefully lay more stress upon the duties peculiar to the probationer. Tube-feeding, catheterisation, the giving of enemata, &c., will be practised and taught by a senior nurse; but it is often the probationer's duty to learn to persuade her patients to eat by understanding their fears or other reasons for refusal, and to report on the excretory functions, watching for a distended bladder, or for constipation, preventing needless incontinence by timely attention, and avoiding discomfort by prompt cleansing of a soiled bed. It may be noted that the rule about "seclusion" has now been altered. A valuable addition would be a section showing how large a part is played in treatment by the hospital environment in general, and by the relations between staff and patients; the nurse cannot learn too soon her ability to help in treatment that every word and gesture may have an effect on the patient, even when apparently unnoticed.

The book is of handy size, and every junior nurse should enter on her work with it in her pocket and study it thoroughly in her leisure hours.

A Handbook for Nurses. Seventh edition, revised. By J. K. WATSON, M.D. Edin., Capt. R.A.M.C. London: Faber and Gwyer. 1926. Pp. 802. 7*s.* 6*d.*

Dr. Watson's handbook has again been revised and brought up to date. The chapter on digestion and dietetics has been enlarged, the Schick test is well described in the section on diphtheria, and new sections are devoted to the use of insulin in diabetes and to the discussion of anaphylaxis. Nurses will find this a useful and well-illustrated text-book at a reasonable price.

The Nursing of Diseases of the Nose, Ear, and Throat. By MICHAEL VLASTO, M.B., B.S., F.R.C.S., Assistant Surgeon to Ear, Nose and Throat Department, West London Hospital. London: Faber and Gwyer, Ltd., 1926. Pp. 229. 6*s.*

THIS little volume presents an adequate review of diseases of the nose, ear, and throat from the nurse's point of view. It begins with a useful description of the out-patient department and of the nurse's duties there, and goes on to explain in simple language the commoner diseases and operations, lists of the instruments necessary for these being provided. More stress might have been laid on the importance of keeping a child well over on the side after an operation for removal of tonsils and adenoids, thus making sure that hæmorrhage is not going on, the blood being swallowed. Some manipulations, such as syringing the nose and fauces and the contra-indications for the first-named process might well have been more fully discussed. The book is clearly written and well illustrated, and will be useful to nurses.

JOURNALS.

BRITISH JOURNAL OF CHILDREN'S DISEASES. Vol. XXIII. July-September.—In a paper on the diagnosis of cerebellar tumours in children Dr. Macdonald Critchley states that the four main symptoms of cerebellar growths in children are in order of frequency—vomiting, headache, disorders of equilibration, and visual disturbances. Another occasional symptom is the so-called "cerebellar fit," which is preceded by no aura or premonitory symptoms, but consists in generalised tonic rigidity of the entire musculature. The physical signs may be classified into those due to actual cerebellar disturbance, such as atonia, ataxia, and asthenia, those due to pressure upon adjacent structures, such as squint and paralysis of cranial nerves, and those due to generalised hydrocephalus, which include enlargement of the cranium and separation of the sutures. Tumours primarily pontine may be distinguished from tumours primarily cerebellar by the late occurrence of drowsiness, by the absence of dysphagia until a very late stage, by the early appearance and rapid development of papilloedema, the late occurrence of cranial nerve palsies and spasticity, and the rarity of sensory loss. —Dr. T. Brushfield and Dr. W. Wyatt contribute the first part of a paper based on a study of 16 cases, dealing with the clinical aspects of epiloia, a term suggested by Sherlock to describe the syndrome of mental deficiency, epileptic fits, adenoma sebaceum, nodular sclerosis of the cerebral cortex, and tumours of the kidney and other organs. Three illustrative cases, accompanied by some striking photographs, are recorded.—Dr. F. Parkes Weber deals with the question of infantilism as a complication of congenital hæmolytic (acholuric) jaundice or anæmia, with a record of personal cases and a review of the literature. —Dr. Parkes Weber also contributes a note on the neoplasm and infection theories of leukæmia and aleukæmic lymphadenoses.—Dr. G. W. Ronaldson reports a case of measles at confinement with a subsequent modified attack in the child. The term "congenital measles" was not applicable to this case as the baby did not develop any symptoms until 15 days after birth. Extraneous sources of infection could be excluded in the child's case, as the patients were treated in a two-bedded room in an isolation block, where there were no other cases of measles. Ronaldson attributes the somewhat prolonged period of incubation and the rudimentary character of the disease to the immunising effects of the maternal milk.—Dr. S. Erdheim contributes a paper entitled Second Attacks of Measles. An account of two cases, which presents the following points of interest: (1) The subjects were brothers. A familial predisposition to recurrence of measles has been noted by other observers. (2) The interval between the attacks was almost exactly one year in each case. (3) The second attack of one child was more severe than his first attack. This is contrary to the generally accepted opinion that the second attack is milder than the first, as was the case in the other child. (4) There was nothing anomalous or characteristic in the clinical pictures of the second attacks.—Dr. Erdheim also reports an example of "illness of infection" in measles, in which the primary illness lasted two or three days and commenced 13 days before the appearance of the eruption.—The abstracts from current literature are devoted to diseases of the new-born.

THE LANCET.

LONDON: SATURDAY, OCTOBER 23, 1926.

RESEARCH IN GENERAL PRACTICE.

GENERAL practitioners are often reminded that they are the backbone of the profession. The praise, of course, is gratifying; but it does not prevent them wondering how much work is to be left for them to do. Public health, tuberculosis, infant welfare, and venereal disease have one by one been "rescued"—as one writer is pleased to put it—from the morass of general practice, and it has lately been suggested that midwifery should also be taken out of this supposedly septic environment. The family doctor, in fact, is finding his practice less and less general every day, even when his panel duties are taken into account, and it is not surprising that sometimes he dislikes the change, since it is in varied responsibility well discharged that doctors must find their chief satisfaction. Some alteration of the work, however, was inevitable. The everyday demands of general practice are so great as to make it impossible for any but exceptional men to keep an up-to-date knowledge of more than a few of the special branches of medicine. The work has to be done under difficulties, for constant interruption, or the fear of it, is of all things most antagonistic to serious reading. If the practitioner is trying to hold his own against all the conflicting currents of medical progress, how can he find time to strike out in a particular direction of his own? How can he undertake original investigation or follow up a line of thought? Lack of leisure, intellectual isolation, and inadequate facilities conspire to prevent him from collecting information and recording his ideas, and there is no doubt that scientific medicine has thus suffered a considerable loss, for it is in general practice that the early stages of disease and the late results of treatment may best be studied. As has often been pointed out, there is in general practice a great opportunity for research—an opportunity largely disregarded. It is only the family doctor who can follow the history of individuals during 30 or 40 years, summing up the hereditary and prenatal influences, the effects of wrong habits in childhood, the final results of infantile and youthful ailments, and the first causes of premature decay or death. To him also come the minor ailments—the colds, catarrhal fevers, and influenzas, the mild exanthems, the medical dyspepsias, and septic conditions such as boils and styes and carbuncles; he has a better chance than any surgeon to judge of the after-effects of operations for such conditions as cancer, gastric ulcer, hæmorrhoids, or varicose veins. Obviously it must be in the interests of science that the general practitioner who has been given an inquiring mind should be encouraged to make the most of his many opportunities, and it only remains to consider how this can best be done.

A possible solution to the problem has recently been propounded by Miss M. FORRESTER-BROWN in an article of considerable interest.[1] For that fundamental hindrance to research, lack of particular knowledge, she sees but one remedy—specialisation. Although the practitioner is to retain cases of acute disease or trivial complaints beneath his own care, so as to keep in touch with the conditions of their homes and save himself from too narrow an outlook, "it should be provided," says Miss FORRESTER-BROWN, "that every chronic case of more than a few weeks' duration would be automatically grouped under a practitioner specially experienced in such disabilities," who "would have at his back the consultant staff of some large institution, and would be the regular attendant, both at their homes and at the clinic, of large numbers of chronic cases of the particular group, which would give him a wide experience of all the phases, such as is unobtainable by specialists under present conditions." "Once the public are educated to demand specialisation," she remarks, "they will not long permit any doctor to treat a chronic case outside his own branch"; but she does not say how long it will take to educate them, and it is on the ground of reasonable prejudice the scheme would be wrecked. Most patients would prefer to go to a doctor whom they know and trust rather than to a man with special knowledge whom they do not know and would fail to see the coöperation between the general and special adviser implied in the design. It is hard to imagine, moreover, that a medical man would readily recommend an old and devoted patient whom he had attended all her life and in all her confinements to go to his local rival—of whom, perhaps, they both disapproved—merely because she had a patch of eczema and the rival was the skin authority for the locality. The effect of such extensive specialisation on the work of the profession is not easy to imagine, but perhaps we may learn from the results of similar differentiation in the infantry towards the end of the war. Company parades were reduced to a handful, as nearly everyone was away on "specialist" courses, and one man was heard to remark pityingly to another: "Of course, you wouldn't understand why I don't go on parade, you being an infantryman. Well I'm a specialist."

The remuneration of general practice is such that to make a competence a doctor must work hard and to make a good income he must overwork grossly or be able in his own practice to grasp all the advantages to science as well as to routine by coöperative business management. Original work involves a loss of leisure or money by one who usually has neither to spare. There are some, however, who would not be deterred from investigation by thought of time or money but are, nevertheless, discouraged by two other factors mentioned above—isolation and lack of facilities. The number of cases of any one condition that a general practitioner may meet in a given time is small and he is properly shy of publishing inconclusive results. If he knew that others were working on the same problems and that results could be published together, he would be less reluctant to undertake research. Most diseases, however, nowadays require some laboratory work for their investigation, and the general practitioner has neither time, knowledge, nor apparatus for carrying this out. The outline of a scheme for overcoming these difficulties was put forward not long ago by Dr. N. M. GOODMAN. He suggests [2] that each of the great teaching hospitals should enrol a number of its old students, now in general practice, who would be able and willing to undertake research. An expert at the hospital would be in charge and would coördinate the work, and the practitioners would be recompensed for their loss of

[1] Practitioner, September, 1926.

[2] THE LANCET, 1926, i., 735.

time by a system of retaining fees. The hospital would carry out any laboratory work needed, and the director would supply references to the literature and undertake experiments suggested. From time to time he would report progress and he would be responsible for collating results and arranging their publication. The working of this scheme may be illustrated by an example. Whilst many practitioners in conducting labour apply forceps as soon as the head is in the vagina, others consider that everything should be left to Nature where possible and that the forceps should never be applied in a normal delivery. An honest report by a group of 20 to 30 general practitioners on the late results of both methods might throw valuable light on a question which remains unnecessarily controversial. We should be glad to see Dr. GOODMAN'S scheme adopted as an experiment by some teaching centre, but it must be remembered that the collation of information received from only half a dozen independent workers may present great difficulties, and that in general practice, as elsewhere, there are only a few men who are likely to have the due bent for research. Although the public has come to regard any and all research work with a sort of mystical respect, the profession ought not fall into that error, remembering that the only real justification of such work is its success—whether positive, negative, or merely catalytic. The ideal organisation is that which places tools in the hands of the man who can use them—and into the hands of nobody else.

ACCIDENTS AND HOSPITALS.

THE after-history of broken bones and other accidental injuries has long exercised the minds of surgeons who have followed up these cases to their final issue. Nearly 20 years ago the late Mr. CLINTON DENT devoted an annual oration at the Medical Society of London to an account of his personal experience, which was that a fracture of the leg, owing to its after-effects, was from the point of view of wage-earning capacity a very serious injury. Such a fracture, under the most favourable circumstances, kept a man from following efficiently an active employment for six months, and it constantly happened—the words are Mr. DENT'S own—that these patients broke down on resuming work and remained permanently incapable of following it, as a direct consequence of the injury. Simple fractures, as they are ineptly called, excited but little interest in the hospital practice of Mr. DENT'S time, and were hardly as closely supervised by the visiting surgeon as cases of more pronounced clinical value. On another occasion Mr. DENT stated that in his long experience as a police surgeon he had never seen a case of Pott's fracture, treated at a general hospital, so completely restored as to permit of a constable's return to active duty. What was true of London 20 years ago seems to have its more recent parallel in other cities. Our Vienna correspondent recently set out the reason for the foundation of an accident hospital in Vienna; it was because the Viennese insurance societies came to realise that they were paying enormous sums just for the want of immediate and adequate aid for the victims of accidents. So they decided to provide a number of beds in charge of a specially trained staff prepared to investigate every fracture and to apply all the resources of orthopædic surgery and mechanotherapy. The statement that this Vienna accident hospital in its first year saved the insurance societies something in the neighbourhood of £18,000 is astonishing enough, but should be read in the light of Mr. WARREN LOW'S remark (see p. 849) that under the present hospital system many patients fail to make economic use of function which has actually been restored.

The treatment of accidents in hospitals raises many difficult questions, some of them new and urgent. Before the era of the motor-car the receiving officer of a large general hospital might be embarrassed by a run of Pott's fractures on the first snowy evening of the year: to-day a fine Sunday evening may overwhelm any cottage hospital with a glut of complicated injuries. And it does not follow that the routine appropriate for the one institution is ideal for the other. In most general hospitals accident cases are under the care of the resident medical staff with only the supervision deemed needful from the visiting surgeons. To collect the cases under one control and in one department would no doubt make for convenience, but would tend to withdraw these instructive cases from the view of the student and from the care of those junior men in whose training the direct responsibility for their treatment plays such an important part. The middle course might be taken of centralising in one department all accident cases, serious and trivial alike, with wards and treatment rooms, under the charge of a whole-time resident of the standing of a registrar. Accidents would be admitted in normal rotation under the nominal charge of members of the visiting staff, and those members who were interested in these cases would visit the department, accept responsibility for the cases under their names, and use them for purposes of teaching. The director would be responsible for the organisation of the department and for the treatment of all cases not specially reserved, and he would give special courses of instruction. Unless some such plan as this is adopted the treatment of injuries is likely to be relegated to a special department and will cease to be a part of general surgery, and anyone can see that this would be a regrettable position for the public. The cost of establishing such a department would no doubt be considerable, but this might well be defrayed by the insurance companies.

At the present time, as Sir JOHN PAGET has recently insisted, it is a grave scandal that these companies contribute nothing towards the treatment of their injured clients in hospital, although in cases where they are treated privately the cost of medical treatment is a part of the accident policy. Moreover, their present attitude to the hospitals is short-sighted since the funds of insurance companies must suffer materially from inefficient treatment, even if not to the extent which they were found to do in Vienna. Both equity and self-interest alike should lead the companies to support an accident department in every hospital with such an open hand that the other funds needed for the work could be found readily; such an arrangement would probably be more satisfactory than to meet the need by the erection of special clinics, independent of general hospitals, where the contributing companies might seek to minimise disabilities and to discharge patients as fit for work long before this was the case. On the other hand, as Mr. LOW points out, after-care centres should be useful in helping the victims of injuries to overcome diffidence in their recovered powers. A lax system may prevail at some general hospitals, and may tend to swell the numbers under treatment by the presence of some who would be better back at work, and in this connexion it would be interesting to hear the views of patients on the rigour of the Vienna system.

AN ANTHROPOLOGIST ON JOHN BULL.

THE first social evening of the session was held at the Royal Society of Medicine on Monday last, when a very large company of Fellows and guests were received by Sir JAMES BERRY, the President, and Lady BERRY. The speaker of the evening was Sir ARTHUR KEITH, who entitled his witty and entertaining address John Bull: a Study in Anthropology. He took as his text the familiar John Bull of BERNARD PARTRIDGE, remarking that not only was the famous *Punch* artist the son of one anatomist and father of another, but also he had drawn John's features with peculiar racial and anatomical insight. The artist, he said, could convey with his pencil that John is bluff, honest, kind-hearted, and generous, with a hearty contempt for everything savouring of pretence, meanness, or dishonesty. The anthropologist with his craniometer, on the other hand, had as yet found no precise method of recording or measuring these characteristics. John is dolichocephalic, but has rather a massive brain. His face shows none of the sharpness and angularity of certain other British types. TENNIEL'S John Bull was an old, old man, but since then he appeared to have grown gradually younger. In the year 1712 the Scotsman, Dr. JOHN ARBUTHNOT, in his "History of John Bull," described the character he had selected as the essential Englishman and to whom he had given this name.

"In the main," he said, "John Bull was an honest, plain-dealing fellow, choleric, bold, and of a very inconstant temper; he dreaded not Lewis Baboon (France) either at backsword, single falchion, or cudgel play; but then he was apt to quarrel with his best friends, especially if they pretended to govern him; if you flattered him, you might lead him like a child. John's temper depended very much upon the air; his spirits rose and fell with the weather-glass. John was quick and understood his business very well; but no man alive was more careless in looking into his accounts, or more cheated by partners, apprentices, and servants. This was occasioned by being a boon companion, loving his bottle and his diversions, for, to say truth, no man kept a better house than John nor spent his money more generously."

A second Scotsman, JAMES GILLRAY, an audacious and brutal caricaturist, developed John Bull from a loose-jowled, putty-faced farm labourer, as he had drawn him, into a typical country publican. Although many of GILLRAY'S drawings showed a very different conception of John Bull from those of ARBUTHNOT and TENNIEL, yet some of them certainly foreshadowed *Punch's* John Bull. The lecturer demonstrated with photographs of English public men how rare in fact was this "typical Englishman," and suggested that he was met more often in Yorkshire than elsewhere.

Neither in face nor colouring was John Bull, he said, a true Saxon, and to find his prototype it was necessary to go far back in our island story to certain immigrants early in the second millennium B.C. These ancient invaders appeared to have originated beyond the Caucasus, where big noses and round heads still abound, and their blood can be traced, said the speaker, chiefly among our landed, professional and business men. While the typical John Bull is not uncommon in Ireland, he is almost unknown in Scotland and on the continent. Hostile French cartoonists gave John Bull a lantern jaw, loose lips, a rabbit mouth, defective chin, and sharp nose, and this caricature accurately represents the anthropological changes which the faces of the British people are most apt to undergo. German artists in the stress of war picked out the prognathous jaw, ample mouth, shrunken snub nose, and cruel countenance occasionally found among prosperous and unprincipled city men. Despite these attempts to crystallise the essentials of English character in one symbolic figure, the supply of individual types remains inexhaustible, as artists and novelists reveal every week, and before anthropologists lies the tremendous task of reducing this complexity to a scientific unity.

Among the interesting exhibits in the library of the Royal Society of Medicine were a collection of X ray photographs and engravings of medical men.

Annotations.

"Ne quid nimis."

THE BEST USE OF FEVER BEDS.

AT its meeting last week the Metropolitan Asylums Board decided on a change of policy in the allocation of beds in hospitals to the various prevalent infectious diseases. Of the total 4185 beds then occupied in M.A.B. hospitals, 2285 contained patients suffering from diphtheria, 1527 from scarlet fever, 194 from whooping-cough, 106 from enteric fever, 34 from measles, 21 from puerperal fever, and 18 from other diseases; the beds allotted in special hospitals to ophthalmia, marasmus, small-pox, tuberculosis, post-encephalitic and convalescent cases are not included in these figures, which, as will be seen, bear no relation to the relative fatality of the various infections. Out of every million people living in London during the last 15 years, 251 have died annually from measles, and only 42 from scarlet fever, the mortality-rate per cent. in the Board's hospitals during the same period being 10·6 for measles and 1·5 for scarlet fever. When the Board decided at the beginning of this period—that is, in 1910—to receive measles and whooping-cough it was with the definite intention of restricting their admission to the number of beds available after the prior claims of scarlet fever and diphtheria had been satisfied. As far as diphtheria is concerned, the claim remains paramount, but so mild has been the type of scarlet fever in London during recent years that the Board believe the large majority of these cases would have recovered whatever the conditions under which they were treated. Moreover, the value of isolation in the treatment of scarlet fever is by no means established, although it is possible that the more severe complications, such as nephritis and otitis media, may occur less often in hospital than in patients treated at home. Even under non-epidemic conditions it would be impracticable to isolate all the cases of scarlet fever, diphtheria, and measles in the metropolis, and to do so would require enormous expenditure on new buildings during an epidemic period, when the number of measles cases may run up to 100,000 in the year; but the ratepayer may quite properly inquire whether he is well-served by an expenditure of 1*s.* 4*d.* per head per annum on the simple isolation of all cases of scarlet fever, when the case-mortality of this disease has gone down from 10 per cent. in the 'seventies to less than 1 per cent. at the present time. Having such considerations as this in view, the Metropolitan Asylums Board, with the approval of the Ministry of Health and the local authorities concerned, have decided to modify the present scheme of allocation of beds, so as to give measles a considerable proportion of the beds now allocated to scarlet fever. As soon as the one competes against the other for admission, the borough medical officer of health will select cases of either in accordance with the necessities and home conditions of the individual case. This decision fulfils a principle, already enunciated in these columns, that while no sanitary authority should or could undertake the isolation of all infectious disease in its area, its utility would be greatly enhanced if it could undertake to deal with selected cases of all kinds, putting in the forefront those from institutions and from poor homes, the new cases in a locality and all those of severe type. It might be feared that such a re-allocation would increase the difficulties of preventing cross-infection, but recent experience of bed-isolation at Fazakerley and other places shows that this problem may not be as difficult of solution as was once supposed.

SIR THOMAS HORDER'S ADDRESS.

THROUGH an inadvertence in the publishing department of THE LANCET an advance copy of our issue last week became prematurely accessible to the public. As a result an address by Sir Thomas Horder was reproduced in the lay press on Thursday evening, in contravention of promises made by the British Medical Association. We deeply regret the occurrence. The incriminated copy of the paper was sold over the counter through a direct breach of rules, which we believe never before to have been broken. The fact that the breach was innocent does not, unfortunately, remove either the mischief done or the chances of misinterpretation.

THE HEAT PRODUCTION OF NERVE.

PHYSIOLOGY, in the guise of the "handmaid to medicine," often receives the lip-service of the medical profession. Yet little or no notice has been taken in medical journals of one of the most remarkable achievements in experimental physiology that has ever been recorded.[1] Prof. A. V. Hill, of University College, London, is already well known for his investigations of heat production in muscle, a piece of work which earned for him the Nobel Prize. He has now followed this up, after years of patient experimenting, by actually measuring the heat produced in a nerve during the conduction of a nervous impulse. It was long believed by many physiologists that the nerve-fibre acted as a passive conductor of the impulse, since no heat production could be detected. Prof. Hill's ingenuity has, however, at length overcome the technical difficulties of the problem, and he has shown that the heat liberated amounts to 0·000 069 calories per gramme of nerve per second of stimulation. The greater part of this heat is produced during the period of recovery after the stimulation has ceased, a fact which was quite unexpected and which opens up fresh lines for the study of nerve function. The means by which this minute amount of heat was measured can be briefly indicated. Prof. Hill had already used thermopiles of extreme sensitivity for his previous work on muscle. The amount of heat produced in a nerve was found, however, to be so infinitesimal that the movement in the galvanometer connected with the thermopile could not be seen. The beam of light from the galvanometer was therefore directed on to a second thermopile which thus amplified the movement in a second galvanometer and rendered it visible. Other difficulties to be overcome lay in the insulation of instruments so delicate from thermal and electrical changes coming from without. Only, it seems, during the early hours of Sunday morning are the subterranean chambers in Gower-street, where the experiments were conducted, immune from gross interference by outside agencies. It is obviously impossible to assess what will be the value to medicine of this remarkable achievement in the field of physiology. Its direct value is probably nil, but its indirect value may be enormous.

ALCOHOLISM IN ANCIENT GREECE AND ROME.

ON Oct. 12th Dr. J. D. Rolleston gave an interesting address on Alcoholism in Ancient Greece and Rome at a meeting of the Society for the Study of Inebriety. He pointed out that as the scientific study of alcoholism dates only from the middle of the nineteenth century very little is to be gleaned from contemporary medical writers as to its prevalence and effects in classical antiquity. The chief sources of information are the poets, especially the gnomic writers, such as Theognis; the satirists, including Horace, Juvenal, Martial, Lucian, and the Greek Anthology; philosophers and moralists, such as Plato, Plutarch, and Seneca; and most of all the two encyclopædic writers, Pliny the elder and Athenæus. As an adherent of the Stoic philosophy Pliny (A.D. 23–79) constantly inveighed against the luxury and corruption of the age; he devotes an eloquent chapter in his Natural History to the subject of drunkenness, and many others to the different varieties of wine and their therapeutic uses. Numerous remedies for the prevention or cure of inebriety will also be found in his pages. Athenæus, who flourished at the end of the second and beginning of the third century A.D., is of special interest to the medical reader, said Dr. Rolleston, in that he has preserved fragments which have not otherwise come down to us of medical and lay writings dealing with the subject of inebriety. In particular he makes several quotations from lost works on drunkenness by Aristotle and his disciples, Theophrastus and Chameleon of Heraclea, as well as from a lost play by Menander on drunkenness and one by Alexis entitled the Wine-bibber. Numerous chapters in the Deipnosophists of Athenæus are devoted to the enumeration of wines and drinking vessels, celebrated drinkers, the evils of wine, and cognate subjects. Some idea of the prevalence of drinking in classical antiquity may also be gained from the contemporary proverbial philosophy relating to drunkards and the numerous synonyms, both in Greek and (to a lesser extent) in Latin, for a bibulous or drunken man.

The drinking of unmixed wines at banquets among the Greeks and Romans, Dr. Rolleston pointed out, was regarded as the sign of a barbarian or a boor, and the mixture of wine with water or snow in various proportions regulated by the master of the feast was carried out in a large bowl from which the wine was distributed to the guests. Both in Greece and Rome the festivals connected with the wine god served as an excuse for widespread intoxication, and finally gave rise to such scandalous excesses that a decree of the Senate was passed forbidding any Bacchanalia being held in Rome or throughout Italy. Apart from festivals the Greeks and Romans of the classical period were, on the whole, remarkable for their sobriety in contrast with certain contemporary nations, such as the Scythians, Carthaginians, Iberians, Celts, and Macedonians, who were notorious for drunkenness. Though there is some indication of the existence of chronic alcoholism, as is exemplified by passages in Pliny and Seneca and in the lives of certain individuals, such as some of the Roman emperors, alcoholism in classical antiquity was mainly of a convivial character, and industrial alcoholism, apart from that associated with prostitution, was unknown. Dr. Rolleston quoted several passages from the classical writers dealing with the dysgenic influence of alcohol and other evil effects of drink on the community and the individual, especially the relation of inebriety to insanity, crime, and poverty, and the measures, often of a fanciful character, recommended by the ancients for the prevention and treatment of drunkenness. In conclusion, he showed that the alcoholism of classical antiquity differs from that of to-day by its predominance among the upper classes, the lack of legislative control, the absence of distilled liquors, which were not introduced until the fifteenth century, and the non-existence of syphilis, which in modern times is often contracted under the influence of alcohol and is liable to run a severe course in alcoholic subjects.

RHEUMATISM IN CHILDHOOD.

IT is encouraging to learn that the efforts now being made in this country to solve the complex question of the rheumatic disease of childhood have their countertype in America. Dr. Thomas T. Mackie, of New York, has contributed to the August number of the *American Journal of the Medical Sciences* an analytical study of 393 cases of rheumatic fever and 89 cases of chorea. Dr. Mackie goes to the root of the problem when he emphasises "the growing conviction that rheumatism is essentially a chronic, often a very slowly progressive disease, having periods of activity and latency which are strikingly parallel to the clinical course of tuberculosis and syphilis." As to types of the disease, he defines an acute form with multiple arthritis, fever, and leucocytosis, and a

[1] Proceedings of the Royal Society, 1926, c., 223.

chronic form, with less well-marked symptoms but chronic cardiac disease; there is also the chorea group, in which females predominate. First attacks of rheumatism are infrequent below the age of 5 years and reach their maximum age-incidence between 10 and 15 years, whereas chorea starts earlier—between 5 and 10 years of age in most cases. Here follows an interesting result of the analysis, for whereas in rheumatic fever the incidence of heart disease in a first attack is at its maximum between 5 and 10 years of age, in chorea it occurs more frequently, case for case, at the later ages, reaching a maximum at the time when chorea itself is less frequent. This aspect of the inquiry may be summarised by saying that the younger a child has its first attack of rheumatism, the more likely is that attack to be accompanied by carditis, while the older it is in having a first attack of chorea, the more likely is carditis to occur. Next comes the more practical question: "How long after the subsidence of an acute phase of the disease must one wait before having a reasonable certainty that potential cardiac damage has completely declared itself?" This question is, of course, bound up with the solution of the whole rheumatic problem, and it is to be feared that the answer to it is, from the economical point of view at least, a depressing one. Most observers will concur in Dr. Mackie's statement, that infection of the heart may "be both chronic and progressive and yet give little or no evidence of its presence for a period of years." This melancholy conclusion, however, carries with it the eminently practical procedure of periodic examination of rheumatic patients, even when apparently cured. With regard to the criteria as to whether active infection has been arrested or not in a given case, Dr. Mackie considers that observation of temperature, leucocyte counts, and especially electrocardiographic studies are necessary to ensure a correct régime of treatment. It is a pity he does not amplify these points in detail, since a valid criterion of latent infection would determine the question of treatment by rest-homes in a given case. In this country more stress has been laid upon the pulse-rate and the cardiac physical signs than upon blood and electrical examinations. With regard to infected tonsils, Dr. Mackie contributes another group of analysed cases, the observation of which leads him to find that whereas 42·5 per cent. of those cases, in which tonsillectomy was performed after a first attack, had later a recurrence of rheumatic fever, no less than 60 per cent. of unoperated cases relapsed within a period of three years or so. We do not know, however, whether hygienic measures, other than tonsillectomy, were taken to prevent recurrence in these cases. His last series of observations, which deal with the interval between the first attack and the first recurrence, and take account only of acute attacks of polyarthritis, forces Dr. Mackie to restate his concept of rheumatism as a "chronic, slowly progressing disease characterised by intervals of calm simulating and periods of activity which entail further damage." Unobtrusive symptoms, such as anæmia and slight muscle pains, may be the only warnings of a process of the utmost gravity; hence salicylates, in producing only symptomatic relief, may be a positive danger in that they confer a sense of false security.

THE TEACHING OF ENTOMOLOGY.

EVERY layman is familiar nowadays with the importance of insects as porters of disease. If there were no mosquitoes, fleas, or tsetse-flies the world would be a much healthier place. And man's power to control insect-borne infections can generally be exercised much more effectively against the insect than against the infectious agent itself. For when we have to deal with small things which occur in multitudinous numbers it is easier to affect them by changing their environment than by direct attack; the plague bacillus is embarrassed by taking away part of its habitat, the flea, and fleas are dealt with more simply by destroying their habitat, the rat, than by catching them with a piece of soap. To know what to do when some insect is implicated in the spread and maintenance of some disease, we must know all that is known (and will probably want to know a good deal more) about its life and habits, and entomology has now added a practical utility to its function of edification. There are, too, some striking instances of how the utmost refinements of entomology may be needed. The mystery of why Madras has escaped plague in all the years it has prevailed in most of the rest of India was solved by the discovery of the flea experts that the common rat-flea there is not *Xenopsylla cheopis*, as had been supposed, but another very similar species, *X. astia*, which had been confused with it. Those who are interested will find in the last number of the *Annals of Applied Biology* (vol. xiii., 1926, p. 402) an account by Dr. A. D. Imms of the successful control of seven or eight insect pests in the Hawaiian Islands by the introduction of other insects which fed on or parasitised them. Indeed, the case for the importance of entomology is overwhelmingly strong. It was stated to the International Congress of Entomologists at Zürich by Dr. H. S. Fremlin, of the Lymph Department of the Ministry of Health, and his paper is printed in their Transactions (vol. ii., p. 344). Insects are, he says, one of the great world menaces, and he asks that something should be done to secure that entomology is taught in every school. It is evident that no one ought to grow up without knowing that caterpillars turn into pupæ and pupæ into butterflies. And it is comforting to realise that a great deal is done already throughout the country to enforce a knowledge of insects of that order. Children nowadays generally know a good deal more about such matters than their parents, who went to school before "nature study" had been invented. What they get is, no doubt, slight, but it is a basis to which more can be easily added later if necessary, and, quite apart from the time-table, we doubt whether the application of entomology to the suppression of disease is a subject of any great educational value.

TOWARDS AN INTERNATIONAL CONGRESS OF OPHTHALMOLOGY.

AT a general meeting of the Convention of English-speaking Ophthalmological Societies, held in London in July, 1925, it was resolved to empower its President, Mr. E. Treacher Collins, to appoint a standing committee of five, whose duty it should be to coöperate with other ophthalmological societies in promoting international congresses. This committee, consisting of Prof. Edward Jackson (Colorado), Sir John Parsons, Dr. G. A. de Schweinitz (Philadelphia) Mr. Leslie Paton, with Mr. Collins as chairman, considers that the time has now come to take steps to form an international committee. It is desired that each nation should be represented by two delegates nominated by arrangement between the principal ophthalmological societies of the nation, or, in the case where no national ophthalmological society exists, by representative ophthalmologists, and invitations to nominate delegates have been sent out. The proposal is that the international committee shall meet at The Hague in July next year. It may be recalled that before the war, 1914–18, international ophthalmological congresses met every five years, the first being held in 1857 before the International Medical Congress was established. One was due to have been held at Petrograd in 1914, but was abortive. In 1922 an attempt was made by the Ophthalmological Society of the United Kingdom to revive the meetings, but international memories rendered it of no avail. The move which began last year at the London convention will have its fruition when a representative international committee has again come into being. The primary function of the committee when formed will be to arrange for the next international congress. In the meantime it is proposed to obtain such coöperation as is possible in promoting international action in relation to the prevention of contagious

ophthalmia, the establishment of uniform methods of recording tests, and the interchange of ophthalmological literature.

MENTAL DISORDER IN SCOTLAND.

THE twelfth annual report [1] of the General Board of Control for Scotland shows that the problems before the Scottish Commissioners are very similar to those occupying the minds of their English colleagues.[2] The first subject discussed is the early treatment of mental disorder and the necessity of providing facilities for voluntary admission to mental hospitals. We have noted in previous issues the obstacle which certain parish councils have opposed to scientific advance by their refusal to forego the Government grant allowed for certified patients. As long ago as 1890, however, the parish council of Glasgow inaugurated hospital wards for the treatment of temporary and incipient mental disorder, and their example has been followed by the councils of Govan, Paisley, and Dundee. It is interesting to note that the observation wards at Duke-street and Stobhill (Glasgow) have done such good work that the erection of a third asylum for the district has not been considered necessary. Although there are only 160 beds, 1176 patients were admitted during last year and less than a third of these were eventually certified. The provision of out-patient clinics, which is being pushed with such vigour in England and Wales, is still very inadequate in Scotland. The Glasgow General Dispensary and Western Infirmary are the only clinics at present in existence, but one is to be established at the Royal Infirmary, Edinburgh. Scotland, like other countries, has found that open-air treatment has reduced the high incidence of tuberculous infection among mental patients by one-quarter.

On the whole it must be admitted that Scottish mental hospitals are behind the southern ones in the extent to which they have been "hospitalised"—at all events in name; the retention of the words "asylum" and "lunatic" in this report and throughout the country is an indication that there is yet much to be done. Very few district institutions have a visiting specialist staff; some are even run without a resident medical officer at all, while others have inadequate medical or nursing staffs. No reference is made to any system of discharge on trial or money grants. Nevertheless, as a rule the Board have been supported in their efforts by the district boards and medical officers. Many institutions now have properly equipped dental rooms and a visiting dentist; some of the larger ones have ultra-violet light and hydrotherapeutic installations. The report suggests that these expensive plants, and also clinical laboratories, should be established only in certain accessible centres and at the expense of groups of district boards. The problem of occupational therapy is dealt with in the first place, naturally, by providing work in the hospital grounds. Twenty-two of the district asylums have farms, and the Board have suggested that every institution should have a minimum of one acre to each male patient. For those who cannot be employed in farm or garden the Brabazon Society continues its valuable work. The ladies who belong to this society visit the hospital once a week to instruct the patients, and occupational therapy has also been established in asylums where there are no voluntary workers. It is now possible for all public authorities to send their cases of encephalitis lethargica to Stobhill, where special treatment and research can be carried out.

In a 15-years' review of the statistics the Board point out an apparent but not a real decrease in certified persons. The discharge- and death-rates have not appreciably altered in the three quinquennial periods, and there is, on the whole, a striking uniformity in the statistics, except for an increase in the death-rate during the war. This reflects the sensitiveness of asylum patients to the mental and physical stress of war conditions. From 1910 to 1914 there was an average of 546 mental defective patients at the two institutions; in 1919 the number had risen to 1680 in 14 institutions. It is this certification of mental defectives under a different Act that accounts—and more than accounts, in the opinion of the Board—for the diminished number of cases registered under the Lunacy Act. A census of all the mental defectives throughout the country showed that there were last year 12,969 registered persons. Apart from those under the control of the education authorities there was a total number of 2202 who had not been certified and who did not come under the statutory powers of the Board, and there is a waiting list of 250 for the institutions. The boarding-out system appears to be working satisfactorily. When comparison is made between the paragraph on mental defectives in this report and the anxiety expressed by the English commissioners the doubt arises whether Scotland is yet fully aware of the gravity of her mental deficiency problem.

On Jan. 1st, 1926, there was in Scotland a total of 18,537 insane persons under cognisance, an increase of 139 during the year. Only 597 voluntary boarders were in residence on the same date. The death-rate for the year was 8·6 per cent. The report does not discuss the problem of nursing, but leaves its readers to deduce the state of affairs from the bald facts that 1020 attendants and servants resigned during the year (being 93 less than the year before), 134 left without notice, 41 were dismissed for incompetence, and 98 for misconduct.

"DOCTOR 'MY BOOK.'"

THIS is the somewhat enigmatic title of a play by Mr. Rudolph Cordova, collaborating with his wife, who writes as Miss Alicia Ramsey, which is a feature of the current issue of the *Tatler*, and is published in connexion with the press movement during the past week in support of the funds of St. Bartholomew's Hospital. If the title is difficult to understand there is nothing obscure about the play. It is a series of dialogues between the great Abernethy and a succession of patients and their friends who consult him, the dialogues being constructed to illustrate, as their common object, the great man's known character and notorious eccentricities. The types of Abernethy's visitors, therefore, have been selected to form obviously dramatic contrasts, and to permit the introduction of familiar anecdotes displaying Abernethy's brusqueness towards those who magnified their trifling ailments, and extreme kindness and generosity towards those who could ill afford his fees. The aptness of many of the episodes will be recognised by medical men as founded on much of the medical history of the time, in which Abernethy bulks so largely; but we do not know what the authority may be for attributing to Abernethy himself habits of gluttony, though the humour is obvious, from the playwright's point of view, of allocating such personal habits to the great public prophet of the ills which follow upon abuses of the intestinal tract. Undoubtedly the play should arouse the interest of a wide public in the prosperity of the great institution where Abernethy, the prime exponent of John Hunter's revolution of surgical outlook, so long reigned paramount, and the reproduction of Lawrence's famous portrait of Abernethy, which hangs in the hall of the hospital, is a striking one considering its scale.

RADIUM THERAPY OF CANCER OF THE CERVIX.

THE attitude of most surgeons at the present time to the use of radium in the treatment of carcinoma of the cervix was recently defined by Mr. T. G. Stevens in THE LANCET (Oct. 9th, p. 769). They hold that radium applications should be reserved for clinically inoperable or borderline cases, in the belief that extended panhysterectomy gives better results in operable conditions. He went on to point out that there are no data yet available to confirm or disprove

[1] H.M. Stat. Office, 1926, pp. 48. 2*s*.
[2] THE LANCET, Sept. 11th, p. 557.

this impression, since no large series of operable cases have been treated by radium alone, and that it is quite possible that with increasing experience the technique of radium therapy will so improve as to make it the method of election even in operable cases. We suggested six months ago [1] that since with the technique now used in some clinics the results in inoperable cases are so remarkable, the time is ripe to check the ceaseless sporadic attempts at variation and still further improvement of the methods of applying this new weapon, and to persuade at least some of those who are using it to limit themselves to an extensive trial of some agreed standard technique in a series of cases. This course has been adopted by the group of medical women entrusted by the Medical Research Council with the use of 300 mg. of radium bromide lent by the British Empire Cancer Campaign for research purposes. The first report of the Cancer Research Committee of the London Association of the Medical Women's Federation has now been issued [2] and merits praise for the clear way in which the problem is discussed and for the admirable coördination of work conducted in four hospitals inconveniently far apart. The standardisation of the treatment was made possible by the appointment of a research officer in the person of Dr. E. Hurdon, who sees every case, advises on special points, and is responsible for the case records and follow-up system. She was asked first to make a detailed survey of the literature, limiting her inquiries to those clinics at which the fate of a relatively large number of cases had been followed for at least five years after treatment. The important result of these inquiries forms Part I. of the report, and those who are interested in the present world position of radiotherapy in cancer of the uterus will find it clearly summarised in ten pages, including some 50 references to original papers. After studying the information collected by Dr. Hurdon the committee decided to adopt, with certain modifications, the methods which have been in use for 15 years at the Radium Hemmet, Stockholm, under the direction of Dr. J. Heyman. In the records from this clinic the "absolute cures" (Winter's requirements)[3] amounted to 20·29 per cent. in 375 inoperable cases of cancer of the cervix, the primary mortality being 1·19. The technique adopted by the committee, modelled on that used by Dr. Heyman, is set out in detail. After preliminary preparation of the patient, which may involve cystoscopy to exclude cases in which the bladder is involved, the vagina is disinfected and dilated and tissue is taken for microscopic examination. Two tubes of radium in tandem are then inserted into the utero-cervical canal. Flat applicators are placed in contact with the growth in the lateral vaginal fornices, and anteriorly or posteriorly as indicated. The vaginal applicators are kept in place by a firm gauze pack, which also serves to protect the vaginal mucous membrane, and to prevent the bladder and rectum from too close contact with the radium. Three applications are made, the second one week after the first, and the third two weeks after the second. The length of time of each application is 22 hours; 50 mg. element are used in the uterus and 50–70 mg. element in the vagina. The total dose varies between 5000 and 7500 mg. element hrs. The number of cases of cancer of the cervix treated thus during the first six months was 42, of which six were operable.

It is far too early to discuss results for, as is pointed out in the report, an early complete disappearance of local signs is in accordance with general experience and cannot serve as a basis for an optimistic prognosis. The work done under the auspices of this Cancer Research Committee has not been confined to cancer of the cervix; six cases of cancer of the uterus are under treatment, and one case of cancer of the vulva. It is noteworthy that the majority of the patients did not consult a physician until the disease was far advanced, and, moreover, that in more than 25 per cent. the average time elapsing after consultation before a local examination was made was seven months. Some were receiving medical attention for a year or 18 months before an examination was made. The reluctance of patients to submit to a vaginal examination at the hands of the family practitioner is well known, and cases of abnormal bleeding of vaginal discharge are often referred to medical women for this reason. This fact, and the efforts being made to conduct the investigation by medical women into the therapeutic scope of radium on scientific lines, should secure an adequate response to the appeal being made for funds to prosecute and develop the work.

[1] THE LANCET, 1926, i., 869.

[2] The Radium Treatment of Cancer of the Uterus. A Report of the Medical Research Council and to the British Empire Cancer Campaign. London: H. K. Lewis. 1926. Pp. 28. 2s. 6d.

[3] G. Winter (1923): Zentralbl. f. Gynäk., xlvii., 1084. The requirements for determining "absolute cures," which were adopted, are: (a) All cases which come to the clinic to be included. (b) All fatal cases to be enumerated. (c) Observations to extend over a period of five years. (d) No deductions to be allowed.

POSTURE AND ANÆSTHESIA.

THE importance of a correct posture of the patient during operation has long been manifest and attention has also been given to the position in which he is placed when returned to bed. In a contribution to the *American Journal of Surgery* for August Mr. Willy Meyer emphasises the dangers of material aspirated into the lungs during or soon after operation and draws attention to the value of the Trendelenburg position as a preventive measure. The value of correct posture during operation is not confined, however, to its efficacy in preventing aspiration. The position in which the patient is placed has an important bearing on the proper performance of the circulation and particularly on the due blood-supply to the brain. Dr. Leonard Hill has laid stress on the influence which gravity brings to bear in the distribution of the blood during full anæsthesia. The vasomotor mechanism is paralysed by which in ordinary life alterations of position are prevented from leading to too extensive accumulations of blood in the dependent parts of the body or too scanty a supply to those which are raised. Consequently, a low position of the head in formidable operations is as necessary for the patient's welfare from the point of view of keeping the cerebral circulation sufficient as it is for the purpose of avoiding aspiration of mucus or saliva into the air passages. When the operation involves the risk of blood or pus entering the air passages posture is, of course, of prime importance and properly managed can keep the larynx free from invasion even without the electric sucker which is now so commonly employed in these circumstances. Position, indeed, is really more reliable than the sucker, which is not immune against sudden choking. Referring to bronchitis after ether anæsthesia, Mr. Meyer quotes Prof. A. Bier for the novel treatment by intramuscular injections of 8 drops of ether in an equal amount of sterilised olive oil. This is said to be effective by making the bronchial secretion more liquid. It is an interesting suggestion in view of the diametrically opposed and strongly recommended practice of treating these patients by the use of atropine or belladonna.

LAST Monday, at 4 P.M., Sir John Rose Bradford, President of the Royal College of Physicians of London, delivered the Harveian oration, which is printed in full in this issue of THE LANCET. He then presented the Bisset-Hawkins medal for 1926 to Dr. A. T. Stanton, principal medical officer to the Federated Malay States, and director of the Government laboratories, whose work has thrown so much light on the difficult subject of the ætiology of beri-beri. This medal is bestowed triennially upon some duly qualified medical practitioner who is a British subject and who has during the preceding ten years done such work in advancing sanitary science or in promoting public health as in the opinion of the College deserves special recognition. Previous recipients of the medal have been Sir Ronald Ross (1914), Sir Arthur Newsholme (1917), Sir William Hamer (1920), and Sir Thomas Legge (1923).

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXCIV.

THE TREATMENT OF SENILE INSANITY.*

II.—SENILE MENTAL CONDITIONS.

SENILITY, like presenility, is a relative term and cannot be defined with any accuracy. In this article mental deterioration appearing from the early 'sixties to the end of life is that to which the term senile dementia is applied. The treatment and care of a case of simple senile dementia will be first considered, afterwards the special features of presbyophrenia, senile confusion and delirium, and senile dementia associated with arterio-sclerosis and certain neurological disturbances will be discussed.

Simple Senile Dementia.

This condition is an exaggeration of our common inheritance, if life be sufficiently prolonged, that is, dotage. There is loss of memory for recent events, increasing inability to recognise faces, an egotistical outlook, and a failure to consider the needs of others. Change is intolerable; the same food, the same chair, the same comforts must all be available at the instant they are required. Reminiscences of the scenes and activities of youth are repeated ad nauseam, and there is a progressive failure of comprehension for private and public affairs. These mental changes are accompanied by the well-known physical regression, the wrinkled skin, loss of hair, failure of strength, nocturnal wandering, and somnolence by day, until "last scene of all, that ends this strange eventful history, is second childishness, and mere oblivion—sans teeth, sans eyes, sans taste, sans everything."

It should be possible to treat the simple senile dement successfully in home surroundings. If there is no responsible relative who will undertake his or her care, homes can be found, where for a moderate payment the senile patient is adequately cared for. The practitioner should make careful inquiries before advising reception into such institutions. Many poor persons will have to find a shelter in Poor-law institutions. Every effort should be made to prevent old patients from ending their days in an institution for the insane.

Rules for the Management of Simple Senile Dementia.

It will be the duty of the practitioner to frame certain simple rules for home nursing.

The bedroom is best situated on the ground floor, or at any rate, the first floor of the house. Slippery polished surfaces, loose mats or rugs, must be avoided as a fall may easily result in a fracture. Arrangements must be made to accompany the patient up and down stairs. Open fires must be provided with guards, and it may be well to block the lower sashes of windows on the first floor if the bedroom is upstairs. A commode in the sitting-room and bedroom is useful. Disinfectants must not be left lying about in the water-closet. A punctual routine in the management of the senile patient is important.

The *diet* should be light, especially at night, the principal meal being taken at midday. Meat should only be allowed once, and should be minced in the more advanced cases. It is better not to give food in between meals; instead the intervals between meals may be shortened and their number increased. Some patients will be difficult to persuade to take enough food, others are voracious and eat too quickly and too much. Milk, eggs, fish are all suitable. Meat, raw vegetables, and raw fruit should be curtailed. Wine may be allowed, and tobacco permitted after food. Whatever arrangements are made, punctuality in serving is essential. If there is a tendency to frequency of micturition at night, fluids should be reduced to a minimum after 6 P.M. The evening meal should be light, and eaten at 7 P.M. at the latest. Early hours must be kept and 9 P.M. should see the patient retiring to bed. Male patients may be allowed a urine bottle within reach, so that it is not necessary to get out of bed to micturate. Nocturnal restlessness is in some cases a great difficulty, and is often worse with women, who choose the early hours to get up and go dusting. A cot with high sides may be tried, but there is always the risk of an active patient trying to climb over the sides. A box mattress on the floor is safer. The bedding should be generous, and bed socks of wool invariably worn. Hot bottles are advisable in the winter months.

Exercise.—A daily walk should be taken, with an escort, a necessary precaution in towns or in the neighbourhood of main roads. Care must be taken to see that the clothing is warm, and that wool is worn next to the skin. A woollen waistcoat or jumper should be worn in the autumn, winter, and spring seasons. Easterly winds are a menace to all senile patients, and with the wind in that quarter outdoor exercise may be foregone. Patients who are too feeble to walk may be taken for drives. A horse-drawn vehicle is more suitable for senile persons than the rapidly moving car.

Insomnia.—The best hypnotic is alcohol. Hot whisky and water, or brandy and water seem to produce the best results, but well-warmed claret or burgundy may serve. If alcohol fails several hypnotics may be tried. Paraldehyde ʒ i. or ʒ ii. is safe, and its taste rarely resented by the senile patient. Medinal gr. vi. or gr. x. may be used for long periods, is easily administered, and without risks. Amylene hydrate, ʒ ss. to ʒ i., is also satisfactory. Sulphonal, chloral, and bromides are contra-indicated. Patients who wake in the early hours of the morning will often drop off after a glass of warm milk or some patent food.

Restlessness is seldom extreme in the simple case. Bromides, if used at all, are useful here. The following mixture is suggested for occasional use:—

Potass. bromid. gr. xv.,
Spt. ammon aromat. ℥ xv.,
Aquam chloroformi. ad ʒ i.,
ʒ i. s.o.s. ex aq.

Tr. opii 10 to 20 drops three times daily is often most effective in controlling restlessness. The dose may be increased and only gradually diminished when it has fulfilled its purpose. A warm bath is an admirable measure, and will often promote sleep.

Constipation is a troublesome feature of senile dementia. There should be no hesitation in prescribing an enema, especially where there are signs of agitation and restlessness, common results of constipation. Ext. cascara liq. ʒ ss. to ʒ i. at night seems to suit senility. A freshly made infusion of two or three senna pods is another good nightly draught. Oily preparations are not suitable, and salines will often upset patients and make them sick. Small doses of calomel, gr. ½ every hour up to gr. iv., give good results. A suitable laxative should be adhered to when it is found.

Observation.—Constant watchfulness must be impressed upon those responsible for the care of a senile dement. Not only are there dangers from falling and wandering but such patients are notoriously careless with fire. Matches and spills used by smokers must be dealt out sparingly. Shaving may present difficulties also. Some member of the household will usually undertake the task with a safety razor. A nurse or male attendant will be a great help in the management of simple senile dementia.

Presbyophrenia.

This is a variety of senile dementia in which there is a profound disturbance of memory and orientation. The patient becomes absolutely lost in time and space, fails to recognise his or her relatives, and fabricates freely, relating the most impossible experiences. Some develop ideas of persecution, and may become abusive and threatening to others. On the whole, they are suggestible, and can be managed at home. The treatment differs in no way from that of the simple form, save that extra vigilance is necessary. A temporary removal to a hospital may become advisable, and is an event for which the relatives should be prepared.

Senile Confusion or Delirium.

In this class are found the cases that give most trouble to the practitioner. They are unreasonable, often hallucinated, suspicious, and impulsive. Extreme wandering is common, suicidal attempts occur, and assaults upon others result from delusions of marital infidelity or paranoid ideas. Refusal of food may also arise, and is of grave import in an old patient. The need for institutional care is evident, and should be urged by the physician in charge. Such cases prove an unfair burden to any household, and it is remarkable how often removal from home produces improvement, and may lead to an early return of the patient to home surroundings. In emergency great excitement may be controlled

* An article in this series on the Treatment of Presenile Mental Disorders appeared last week.

by one or at most two injections of morphine hydrochloride gr. ¼ and hyoscine hydrobromide gr. 1/120 or 1/150. Hyoscine should on no account be continued.

Senile delirium is a condition which suggests a terminal infection, and is nearly always fatal.

Senile Dementia Associated with Arterio-sclerosis and Neurological Disturbances.

Arterio-sclerosis may be a prominent feature of senile dementia. Cerebral hæmorrhages and thromboses occur. Convulsions (senile epilepsy) are not uncommon. Headache may be a constant complaint. Convulsions are treated with a prompt enema, an injection of morphine, followed by a few doses of the sedative mixture already suggested. If the fits continue lumbar puncture will often relieve them. Nitrites and iodides relieve headaches, and help most patients materially. The arterio-sclerotic changes in the vessels of the cord may produce spastic paraplegia, sensory losses, retention or incontinence of urine and fæces, and trophic sores. Absolute cleanliness in nursing is essential, together with a diurnal toilet of the skin over bony prominences with spirit and an antiseptic powder. Actual sores must be dressed twice daily with a mild astringent lotion. An air or water bed will have to be procured. Some patients complain of severe cramps in the legs, which may be due to cord lesions, or arterio-sclerotic changes in the vessels of the limbs, often accompanied by intermittent claudication, a limp in walking. A useful mixture to relieve these pains is :—

Potass. iodid. gr. i.ss.,
Spt. ætheris nit. ℥ xv.,
Syr. tolut. ℥ ss.,
Aquam ad ℥ ss. t.d.s. ex aqua.

Parkinsonism and chorea may both occur in senile dementia. Hypochondriasis is the outstanding feature of the mental state of paralysis agitans. Treatment will not be considered here, but it may be noted the continued use of hyoscine to relieve Parkinsonism has been known to produce a confusion accompanied by hallucinations.

The Senile Delinquent.

Reference must be made to the treatment of delinquency, though it consists in maintaining an adequate control. Sexual excitement may be an unpleasant feature of senile dementia. Improper advances to girls, or boys, exhibitionism and various other indecencies occur in any form of the disorder. Homicidal attacks and suicidal efforts are more common than is generally admitted. If adequate control cannot be secured at home, certification must be advised, where it is possible. In any case, if deterioration is advanced, and antisocial acts a frequent occurrence, the presence of such a patient imposes an intolerable burden on most households, and may have a most undesirable influence upon younger generations.

Medico-legal Points.

Practitioners may be called upon to give evidence as to the testamentary capacity of a senile dement. The important points to remember are that a medical colleague should be called in, that each physician should preferably obtain two interviews, and that notes made at the time of the examinations should be carefully kept. The practitioner should ascertain whether or not the patient understands the nature and extent of his property, and how and why he intends to dispose of it. The presence or absence of delusions, and the degree of orientation should be noted. In giving evidence the physician should beware of being trapped into an attempt to define the difference between normal senescence and senile dementia. Lastly, it is often forgotten that the affairs of a senile dement may be controlled, without certification, under Section 116 (*d*) of the Lunacy Act. Application to the Master in Lunacy should be made through solicitors, and must be supported by medical affidavits.

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Special Articles.

THE MOTOR SHOW AT OLYMPIA.

SOME SPECIAL FEATURES.

IN reviewing last year's show we ventured to suggest that the intense competition between manufacturers of moderate-priced cars could hardly last. Actually it seems to be fiercer than ever, and to be entirely unaffected by industrial trouble. Not only have the prices of many cars been still further reduced, but the cars themselves are better and more lavishly finished and fitted than ever. Hardly any old favourites are absent, and many models and some makers appear for the first time.

One of the most interesting features is the extraordinary cheapness of small covered cars. This is the first show when the small coupé or saloon is really within the reach of the smallest purse that is capable of buying a car. "Open" cars, on the other hand, have such good hoods and side screens and close so tightly that even those who have constantly to face inclement weather conditions will not suffer much inconvenience. Four-wheel brakes are the rule rather than the exception, and balloon tyres and shock absorbers are fitted to the cheapest models. It is not possible to offer advice except in the most general terms to the medical buyer. Price and quality run very closely together, and the more the doctor pays for a car of a given power the better balanced is its engine and the more carefully finished are its gears likely to be. He can also, if he wishes, spend extra money to obtain the undoubted advantages of real leather and pneumatic cushions, and in various accessories. But even the cheapest cars do not fall below a certain minimum of quality, and that minimum is higher than anyone would have considered possible five years ago. Probably nearly every car in the show, except some of the quite experimental models, can be trusted to give satisfaction for years if reasonable care is used.

Cheap Cars.

For the first time in history there is a £100 car. Pre-war attempts never produced at this price anything that could really be looked on as more than a "cyclecar" but the 8 h.p. Gillett gives promise of being good value. It is made by the Ensign Co., who have produced a limited number of very good 12 h.p. cars, and has a four-cylinder engine, four-wheel brakes, and a self-starter. It is, however, hardly past the experimental stage, and will not be seriously marketed before next April. The nearest approach to the £100 mark, therefore, continues to be the Trojan at £125 with short body and solid tyres. There is also a full four-seater at £140, and pneumatic tyres cost £5 extra on either model. The medical man of limited means might do much worse, as the car is suspended on four long cantilever springs, holds its top gear like an American six-cylinder car, has full all-weather equipment, and a device for starting the engine from the driver's seat. Its only drawbacks are the low speed and a tendency for the front wheels to skid on a greasy surface. The well-known 7 h.p. Austin is down to £145, and is better than ever; it does 45 miles to the gallon and is twice as powerful as it looks. The triangular war between Morris, Clyno, and Citroën continues apace, and all three sides have extra attractions to show. The Morris-Cowley is now hardly recognisable, for it is dark blue, with a flat radiator somewhat like that of the Rolls, which gives much better cooling than the old type. The wheelbase is four inches longer and the four-seater has a correspondingly longer body of the "bath" type, with adjustable and separate front seats. Smith shock absorbers replace the Gabriel snubbers. The prices are £148 10*s.* for the two-seater or £160 with four-wheel brakes; £182 10*s.* for the coupé, and £195 for the saloon. All Clynos now have four-wheel brakes. The standard two-seater costs £160 and the

four-seater £172 10*s.*; the "Royal" models, with their more luxurious equipment, £195 and £199 10*s.* respectively. The four-door saloon costs £230. The Citroën 11·4 (built in this country) is sold as a four-door four-seater with four-wheel brakes for £165, and a four-door saloon for £210. There is little to choose between these three makes. The medical man who wants a car at this price should try them all before he decides.

"Twelves" and "Fourteens."

The range of choice in this group is immense. "Twelve" means nowadays something a little bigger than a Morris-Cowley, and "fourteen" the lower edge of the big car class. Cars in this group are designed with a view rather to quality and luxury than to a minimum price, and every one is equipped with almost every accessory and convenience that a professional owner can find a use for. Low or medium pressure tyres and four-wheel brakes are universal. The following are a few examples out of perhaps a hundred. The Austin 12 is one of the happiest designs ever executed. Although some subtlety in its dignified proportions suggests a large car, it is only slightly bigger than the ordinary "11·9." It is sturdy enough, however, to carry quite a roomy saloon. The two-seater costs £275, and other models proportionately more according to the elaboration of their coachwork. Hillmans have always made good cars, and the Hillman 14, introduced for the first time last year, was their first attempt at something beyond the light class. It amply maintains their reputation. The touring car at £275 is the cheapest model, but there is a beautiful four-door saloon at £345. Humbers have put a two-litre engine into their last year's 12 h.p. chassis and made it into a 14–40. This firm have too much experience to be likely to commit the mistake of overrating the strength of one of their frames; the 12 h.p. engine was powerful enough, and the new model should be a treasure. Another new two-litre car is the Cluley. This firm already makes a 14–30, and their 1927 14–50 is distinguished by a 4 ft. 8 in. track and an overhead valve engine of over two litres capacity. The design is conventional, and the gear-shift, as on most English cars of this size nowadays, is on the off-side. The price is £400 for the saloon, a very good bargain. The 14–30 costs £295 both as a two- and a four-seater.

Small "Sixes."

There are, of course, many small six-cylinder cars already on the market, such as the A.C. and the Talbot, but this autumn brings several new ones, some of them at a price low enough to be tempting. They are fascinating cars to drive, as they have a smooth silky pull and can be driven through traffic and round blind corners at a walking pace on top gear. The A.C. 16–40 is very light for its power, and with the handy "Aceca" coupé body costs £455. The new Talbot 14–45 is priced at £415 for the two-three-seater. In addition to the virtues which every Talbot car possesses, it has some cleverly thought-out equipment, such as a direction indicator with red arrows a foot long (possibly anticipating future legislation), a switch for the near-side headlamp, and exceptionally easy adjustments for the brakes. An interesting new-comer is the Brocklebank 15, which is to be sold as a saloon only at under £400, a price which will allow it to compete with the American models. It is obviously designed by men of great experience and has hydraulic four-wheel brakes. The new Singer six should be ideal for the medical man, as its price is only £350 as a saloon. The upholstery is pneumatic, and there are four wide doors that can be locked. It has all the usual luxury equipment and more.

Accessories.

In these days of traffic congestion buffer bars have ceased to be an example of American eccentricity and have become an insurance policy against minor collisions, for they take about 15 miles per hour off a shock. They are quite decorative, and some rear buffers can be combined with luggage grids. They are well worth fitting on a valuable car that is to be exposed to constant town driving. Double-bar models vary in price from £7 10*s.* to £3 5*s.*; single-bars from £5 to 45*s.* The Andre Popular model is the cheapest.

Nothing is quite so necessary to the doctor, especially in winter, as some kind of thermostatic device to enable the engine to warm up quickly and to remain warm. The simplest device of this kind is a radiator jacket, costing from 15*s.* to 25*s.*, and a more ambitious one is a metal shutter on the Venetian blind principle, costing between 40*s.* and 60*s.* The Benjamin Electric Co. make very good ones, and also make the Boyce Motometer, by which the driver can keep track of the water temperature. Some sort of thermometer is vital if a muff is fitted and is desirable in any case. It costs a guinea. There are also small thermostatic valves at 30*s.* or so for fitting between engine and radiator to control the flow of water. It is possible to buy a spotlight for 17*s.* 6*d.*, and very useful accessories these are, especially if they have a driving mirror on the back and 12 ft. of flexible lead, so that they can be carried about round the car. 50*s.* will obtain a good one.

Conclusion.

The doctor cannot do better, before he goes to Olympia, than to study the *Autocar* show numbers, the first of which, dealing chiefly with accessories, appeared on Oct. 8th. This week's issue contains a guide to the show, in which the car exhibits are described and their positions at Olympia indicated for the benefit of visitors. A price classification of cars is a feature that will be appreciated by all who are seriously thinking of buying a car and have to consider the monetary side. The issue of Oct. 29th will give a full illustrated account of the exhibition and will constitute a valuable record of what appears to be one of the most interesting automobile shows ever held.

MEDICINE AND THE LAW.

Dangerous Drugs Act Prosecution; Important Submissions for Defence.

AT Marlborough-street police-court on Oct. 15th Lieut.-Colonel John Kynaston was committed for trial at the Old Bailey on a charge raising important issues. He had been summoned for aiding and abetting, counselling, and procuring Rowland Pawsey, registrar of marriages, Marylebone, to attempt to obtain possession of a dangerous drug (powdered opium) contrary to the Dangerous Drugs Regulations, and also for falsely using the descriptions M.R.C.S. and L.R.C.P. Lond., implying that he was a registered medical practitioner on August 23rd, contrary to the Medical Act, 1838. The prosecution alleged that the accused treated Mr. Pawsey for catarrh and handed him a prescription at the top of which were the words "late R.A.M.C., L.R.C.P., M.R.C.S.," while at the bottom, after his signature, were the words "Lieut.-Colonel R.A.M.C., retired, M.R.C.S., L.R.C.P. Lond." The prosecution stated that Lieut.-Colonel Kynaston's name had been removed from the lists of the two colleges indicated and from the Medical Register. The defence took the following points. First, it was submitted that, as Mr. Pawsey could not be convicted of an unlawful attempt to obtain a prohibited drug (since Mr. Pawsey did not want such a drug and did not care whether he got powdered opium or powdered rhubarb), therefore Lieut.-Colonel Kynaston could not be convicted of aiding or abetting him. Secondly, it was urged that the Dangerous Drugs Regulation mentioned in the charge was ultra vires because the Act never authorised the Home Secretary to make a regulation dealing with an attempt to obtain possession of a dangerous drug. Thirdly, in relation to the alleged offence against the Medical Act, it was submitted that the preamble to the Act showed that Parliament thereby intended to distinguish qualified from unqualified practitioners. The accused had been a fully qualified practitioner

ever since 1885. He was placed upon the Register in that year and he remained registered for over 40 years. He had served with the R.A.M.C. from 1886 till his retirement in 1905 and again during the Great War. In 1922 the General Medical Council had removed his name from the Register for alleged advertising amounting to "infamous conduct" in a professional respect. But nothing that the General Medical Council or the colleges could do could prevent Lieut.-Colonel Kynaston from saying that he was to-day a fully qualified medical man. He could not issue death certificates or hold certain public appointments specified in the Medical Act, but, apart from these and other limited disabilities, he was at liberty to practise.

Mr. Cancellor, the stipendiary magistrate, asked if it was submitted that the defendant was entitled to use the letters "M.R.C.S." Mr. Edmond O'Connor, appearing for the defence, was not prepared to answer in the affirmative, but reiterated that Colonel Kynaston was a fully qualified medical man. The magistrate adjourned the second summons sine die but committed the defendant for trial on the first, sending the case to the Old Bailey in view of the importance of the submissions made by the defence.

Successful Action for Fees.

Medical practitioners' services in particular contingencies cannot be uniformly appraised like items in a grocer's catalogue. When a doctor sues a patient for services rendered, the law assumes that the work was not done for nothing and the jury—or, in the absence of a jury, the judge—is asked to say what is the proper remuneration for the work, having regard to the nature and extent of the work and the standing of the practitioner. Any instance, therefore, of a court awarding a doctor a particular fee for a particular service is not to be taken as a universal rule; it does not follow that the same or another court would necessarily award the same sum for the same service in another case. Nevertheless, in practice a certain measure of standardisation is bound to be established, and the fee awarded to a particular doctor is of interest to other doctors. In a recent case in the Llandudno county court Dr. S. L. B. Wilkes sued the executors of the late Mr. R. E. Lloyd, of Colwyn Bay, to recover his charge for two medical certificates. Mr. Lloyd had fallen ill and died shortly afterwards. Dr. Wilkes was called in and on his report to the coroner an inquest was deemed unnecessary. Two insurance companies required a medical report. Dr. Wilkes's claim for fees included a charge of a guinea for each report. The executors took the view that the two reports should have been priced at half-a-guinea each. They, therefore, paid into court a sufficient sum to meet his claim, less one guinea. This meant that, if Dr. Wilkes did not recover a larger sum than the amount so paid in, he would lose the costs of his action from the date of the payment into court. The judge, however, awarded him the full sum claimed. A medical man, observed His Honour, was not like a solicitor whose fees were fixed by scale. The plaintiff was an M.D. of London and the charge of a guinea for a certificate by him was not out of the way at all. As already explained, this decision does not mean that a doctor will always be able to recover a guinea in the same circumstances, but it is important as indicating that in those circumstances the charge of a guinea was considered reasonable.

Hair-dresser's Licence Revoked; Alleged Exorbitant Charges for Scalp Treatment.

Sir Chartres Biron at Bow-street police-court lately upheld the action of the London County Council in revoking the licence granted to an establishment for facial and scalp massage, chiropody, and electrical treatment. It was stated that a visitor to England from Canada went to the shop of Mr. Joseph Caplan, a Charing Cross hair-dresser, last December and was induced by an assistant to have a course of four applications of special treatment for the scalp at a charge of £1 11*s.* 6*d.* He was also sold a bottle of lotion and a pot of ointment with an arrangement for future supplies. In all he was charged £7 18*s.* 3*d.*, though according even to Mr. Caplan's own valuation the charge should have been less than one-third of that sum. It was suggested that the customer was induced to pay an outrageous price by the pretence that he was suffering from a disease of the scalp when in truth and in fact he was not so suffering at all. For the hair-dresser it was stated that, before any complaint had been made, he sought out the visitor, explained the overcharge, returned the full amount of the money, and three days later dismissed the assistant. Two witnesses, moreover, came to say that they had benefited by this special scalp treatment. Sir Chartres Biron held that, even assuming that Mr. Caplan had been absent on the occasion in question, there was sufficient evidence that his establishment was not properly conducted. The appeal failed and the licence is revoked.

The public must be protected from bogus diagnosis of scalp disease and from gross overcharges in respect of it. Mr. Caplan may have been unfortunate in his assistant, but it is satisfactory to find that the vigilance of the General Purposes Committee of the L.C.C., and its prompt action in revoking the licence, found support and confirmation on a re-examination of the facts by an expert legal tribunal.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Aberdeen Hospital Development.

FOR several years the city of Aberdeen has been much exercised about the inadequacy and scattered nature of the existing hospital services. Under the inspiration of Prof. Matthew Hay a large scheme was put forward for uniting the various hospitals in one campus, and has had much support, but the difficulties have been enormous, and meanwhile the public health service of town and county must, like the King's Government, be "carried on." This is, no doubt, the meaning of the expansions now announced. The Aberdeen City Hospital is to undergo further enlargement at a total cost of nearly £70,000, the extensions including a new venereal disease ward and department, a new 60-bed ward, two 40-bed wards, and a new nurses' home. When the work is complete the hospital will have nearly 500 beds. This extension, however, is all in the day's work. What does present novel features of great significance is the arrangement now all but completed between the public health authority and the Poor-law authority. The town council, as public health authority, is to take over from the Poor-law the general and the special hospitals at Old Mill, which were opened in 1907 to provide for the medical work of the Poor-law authority. During the war those two fine hospitals were used for military purposes; but, owing to certain conditions, the Poor-law authorities found it impossible to make full use of the buildings, and were unable to persuade the General Nursing Council for Scotland to accept their training as qualifying for registration. This will now be at an end. The town council is to take over the buildings on condition that it provides for the full medical treatment of all the Poor-law patients for whom the parish council is responsible, and that it adapts the special hospital for the treatment of surgical tuberculosis, pneumonia, and other illnesses, both for the city and the neighbouring counties in the north-east of Scotland, in coöperation with the local authorities of those counties. These developments should result in the hospital being recognised as a training school for nurses and add greatly to its efficiency. It is at once a symptom of the growing demand for hospital treatment and of the need for bringing the Poor-law work on to the plane of modern medicine. Already in Scotland it has happened that a well-equipped Poor-law hospital has been placed in part at the disposal of voluntary hospitals or public health authorities; but this is the first time that a local authority has proposed to take over, lock, stock, and barrel, the full medical organisation of the

Poor-law and to do the work of the Poor-law as well as their own.

Analogies from the Eye.

The opening address of the winter session at the James Mackenzie Institute for Clinical Research, St. Andrews, was delivered on Oct. 5th by Dr. Maitland Ramsay, the hon. director. He pointed out that in the eye physiological and pathological processes can be directly observed as they occur in a state of nature, as distinguished from experiment under artificial conditions; since it is a fundamental principle that similar structures behave alike in all parts of the body, the phenomena observed in the eye are a valuable index of the conditions obtaining in other organs. With this in mind, he drew attention to analogies and contrasts between the non-striped muscle of the eye and that of the heart and other hollow viscera. The nerve-supply of the non-striped muscle of the eye is derived from the sympathetic on the one hand, and the cranio-autonomic on the other—the dilator muscles, whatever their position, having a sympathetic supply, while the constrictor muscles are innervated by the cranio-autonomic. These supplies are anatomically, as well as functionally, distinct. As a result of this reciprocal innervation the pupil is never at rest, the two opposing actions maintaining an equilibrium adjusted not only to the influence of light but to afferent impulses from all over the body. The pupil, for example, varies with respiration, while it contracts during cardiac systole and dilates during diastole. In the eye the dissociation of structures concerned in contraction and dilatation is so complete that a study of the reflexes of the pupil ought to throw light on the mechanism of the heart-beat and the peristalsis of the bowel. Speaking of the analogy between the nerve-supply of the iris and of the heart, Dr. Ramsay pointed out that sympathetic and cranio-autonomic nerves opposed one another in each instance; contraction of the pupil is analogous to slowing, and dilatation to quickening, of the heart. In their reaction to drugs the two organs show a similar analogy. Atropine dilates the pupil and quickens the heart by paralysing cranio-autonomic endings. Adrenalin produces similar effects by stimulating the sympathetic. Loss of the light reflex in Argyll Robertson pupil is no evidence of disease of the iris itself, any more than heart-block is evidence of disease of the ventricular muscle. The severe pain which accompanies spasm of the iris is comparable to that accompanying spasm of non-striped muscle elsewhere—in the heart, intestine, or ureter. The process underlying its production is in each case the same. The ciliary muscle and the heart muscle are two muscles of the body which can be overworked by an effort of will; in one instance the result is the pain and hyperalgesia of eyestrain, and in the other it is angina pectoris. Both can be restored by physiological rest. Each muscle hypertrophies when subjected to prolonged strain and both become, at the same time, more easily broken down.

On Oct. 12th Prof. J. A. MacWilliam read a paper on High Blood Pressure from the Physiological Aspect, before a large audience. An animated discussion followed.

Ices.

At a recent food exhibition, which was a trade affair, there was one very popular stall selling ice-cream. The novel feature about it was that the stall was run by a large dairy company. Obviously the trade in ice-cream is growing large enough to become a feature of the milk market. This trade is difficult to regulate, and it is interesting to speculate whether the fact that a large dairy company finds it worth while to establish such an exhibit means that the manufacture of ice-cream for the general market can be made to pay. Any physician knows that ice-cream, properly made, may be a very valuable nutrient and therapeutic agent, whilst of its popularity with all classes there can be no doubt. The meaning of such popularity is a social problem for the nutritionists. It may be that the excess appetite for this type of preparation is only a symptom of some deficiency in the normal diet. Anyhow, it is an interesting fact to observe that a general dairy company should make the commercial experiment.

Housing.

It is now possible to get a rough idea of the number of houses built in Scotland since 1919. Of houses actually completed, either by local authorities or by subsidised private enterprise, the number is approximately 44,000; the number under construction is about 20,000. A striking feature of the Scottish industrial landscape, say between Edinburgh and Glasgow, are the numerous groups of new houses visible either from road or railway. The comment on the groups of steel houses now appearing is that they look "very pretty." Time alone will tell what satisfaction they can give; but, at least in external appearance, they hold their own. What proportion of houses is due to unsubsidised private enterprise it is impossible to say, but, on the whole, it looks as if the housing shortage of Scotland is now being systematically overtaken. To judge by the official figures the monthly output seems to have reached an average of round about 1000. Large schemes of slum clearance have already been officially investigated and others are being studied.

The Midwifery Position.

The doubling of the training period for midwives has had a disturbing effect on the maternity hospitals. It appears that it is now almost impossible to get probationers. Both in the east and west of Scotland this has been felt so severely that the maternity hospitals have either reduced or abolished their fees for training.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Intracutaneous Vaccination.

AT a recent meeting of the Budapest Royal Medical Society Dr. Géza Petényi read a paper on intracutaneous vaccination against small-pox. When using the scarification method, he pointed out, it is advisable not to bandage the site of the vaccination, because evaporation is checked, the skin gets macerated under the bandage, and secondary vesicles appear. Complications may arise, such as erysipelas, sepsis, encephalitis, and generalised vaccinia, and vaccination is contra-indicated for all children who are not perfectly healthy; this applies equally to older infants suffering from mild alimentary disturbance. Serious trouble may be caused by the presence of eczematous and inflammatory skin diseases, and vaccination should also be postponed when there is any possibility of the child being infected with skin diseases by those around him. Intracutaneous vaccination, said Dr. Petényi, is much superior to scarification, and very probably in a few years will be adopted exclusively. The lymph obtained in phials needs to be diluted with sterile salt solution from 40 to 100 times, and of this dilute solution 0·1 c.cm. is injected into the skin of the forearm or thigh. It is advisable first to puncture subcutaneously and then, passing the needle under the skin for 1 or 2 cm., to push the point of the needle into the superficial layer. The point of the needle should not become visible on the surface of the skin or a regular vaccination vesicle will develop. After the needle has been withdrawn the site of puncture is painted with tincture of iodine. In the course of intracutaneous vaccination two phases are discerned: after 24–48 hours a small, purple solid papule arises, and between the tenth and fourteenth days a round or oval red infiltrate appears, reaching its maximum in three days and then beginning to recede. A small infiltration may remain for months. Fever is present only in the second phase, and even then is considerably less than when scarification is employed; all

symptoms due to the vaccination are mild in their course. Result is assured by the evolution of the second phase. Numerous control observations indicate that the immunity produced by the intracutaneous method is equal to that caused by scarification in both duration and intensity. The new method has the advantage that secondary infections, autoinoculation, and scar-formation are strikingly absent, and that the symptoms are milder. In the presence of an eczema, however, neither form of vaccination should be used. Dr. Petényi considers that it is a mistake to vaccinate infants, as is now done, between the fifth and twelfth months of life, since the rapidly growing organism is at this time especially sensible to insult. It must also be remembered that this is the time of weaning, when the resisting power of children is reduced, even if they seem to bear it well. A further argument against too early vaccination is that vaccine renders the organism allergic, not only to the vaccina and variola virus, but also, apparently, to other substances; it is a common experience to observe in children obstinately recurring strophulus, the commencement of which is coincident with vaccination. If the operation were done at a later period of life these inconvenient sequels would be milder and have a shorter course, if only because as time passes the tenderness of the skin decreases.

The Meinicke Micro-reaction for Syphilis.

At a recent meeting of Hungarian pædiatrists Dr. Ödon Kovács gave an account of his investigations into the Meinicke micro-reaction for the diagnosis of syphilis. Comparative tests, he said, were made in 520 cases. The Wassermann and the Meinicke reactions agreed in 461 cases (88·7 per cent.), and differed in 59 (11·3 per cent.), this ratio conforming to the results of other workers. Where they differed the Meinicke reaction was positive and the Wassermann negative in 9·2 per cent. of cases, whilst in 2·1 per cent. the Wassermann was positive and the Meinicke negative. The cases showing differences were almost all of them latent and treated cases. Out of 63 manifest cases of syphilis the Meinicke reaction was positive in 61, and the Wassermann reaction in 60. In 45 healthy infants under 6 months old Dr. Kovács did not get one single positive Meinicke reaction. As a result of his observations he regards the Meinicke reaction as more sensitive than the Wassermann, but he does not go so far as to say that it is of equal value in the diagnosis of syphilis; this can only be decided after several thousand tests have been made. For the time being he recommends that the Meinicke reaction be used only for orientation; if it prove positive, it should be corroborated by the Wassermann reaction. By this means it would be possible to make systematic blood tests in every single case in children's hospitals and save much time; the new reaction does not require the expensive laboratory equipment nor the services of a bacteriologist which would be needed if the Wassermann reaction had to be done in every case.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are some of the statistics of three English county boroughs and one Scottish burgh for 1925:—

Name of town.	Estimated mid-year population (R.G.).	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.	
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Heart disease.	Infant mortality.	Maternal mort. from childbirth.
Bradford ..	290,200	16·6	14·0	0·98	1·40	3·1	1·4	95	3·7
Portsmouth..	232,900	19·1	12·3	1·09	1·39	2·0	1·4	62	2·5
Oldham ..	146,200	15·5	14·8	1·02	1·37	3·4	1·6	103	6·1*
Paisley.. ..	85,960	22·5	13·2	1·34	1·20	2·5	1·5	96	6·7

* Of the 14 deaths contributing to this rate 9 were from "abortion, miscarriage."

Bradford.

Dr. John J. Buchan says that the hospital accommodation available for Bradford amounts to more than 3500 beds—about one bed for 80 of the population. Only one of the sources of the water-supply is plumbo-solvent—namely, that from the peaty uplands of Thornton Moor. This water has been treated for the last five years by the addition of calcium carbonate and subsequent filtration through slow sand filters, with the result that the amount of lead present in the water, when drawn before 8 A.M., is almost nil. The scheme for the conversion of privies makes progress, the number having been reduced from 10,367 in 1920 to 2612 in 1925. In 954 observations of industrial smoke, 141 chimneys were found to be transgressing the limit or on the verge of doing so. The causes of the excessive smoke were ascertained and the persons responsible were advised. In one case proceedings were taken for dense smoke emitted for 37 minutes during one hour. The defendant alleged that the smoke was not dense and the case was dismissed. Acting on the advice of the stipendiary magistrate, the smoke inspector has cautioned the responsible person and made subsequent observations of the chimney. This method has not proved effective, and Dr. Buchan regrets that such an appeal to reason meets with so little response. The cow population of the city was 3441 in 266 dairy farms. The total quantity of milk consumed is about 14,500 gallons daily, or less than half a pint per head. In the city 7500 gallons are produced, the remainder coming from outside by rail or road. Among the city cows 32 cases of tuberculosis were discovered; in 24 the udder was affected, and in 8 the disease was in an advanced stage. Ten of the cows were slaughtered by the owners, and 11 were taken away from the city and lost sight of. The introduction of the Tuberculosis Order on Sept. 1st enabled 11 to be dealt with, the compensation paid being £101. The Order will, it is hoped, henceforward secure that dangerous tuberculous cows are dealt with in a satisfactory way. Of the 126 samples of milk taken in the course of delivery to the consumer 7 were found to contain tubercle bacilli. The mortality-rate from pulmonary tuberculosis has shown a steady decline during the past ten years, and the same may be said of non-pulmonary tuberculosis, the death-rate for each type in 1925 being the lowest on record. The average rates from all tuberculosis in Bradford during the last five quinquennia have been 1·84, 1·65, 1·53, 1·46, and 1·05. The tuberculosis officer, Dr. H. Vallow, reports that patients taught new occupations at the training colonies have been unable to earn a living in the open market, and that the housing conditions of Bradford render the supply of shelters impracticable. From April 1st, 1917, until April 1st, 1925, the venereal diseases centre was carried on at the Bradford Royal Infirmary, but as the board of management could not spare the necessary accommodation any longer the centre has been moved to the municipal (St. Luke's) hospital, where adequate accommodation, with beds for indoor treatment, has been provided. Dr. Buchan thinks that the "private and confidential" conditions prevent adequate coöperation with the medical profession in carrying on the scheme, and that venereal disease could be better prevented from spreading if local authorities were empowered to obtain knowledge of infectious cases and insist on adequate treatment.

Figures show that the neonatal death-rate is declining although the improvement is small. More interest, however, is taken by women in the hygiene of pregnancy, and the fall in the mortality of early infancy will become more marked as knowledge is disseminated. In Bradford the midwives attended 76·9 per cent. of the registered births and sent for medical help in 13·5 per cent. of their cases. The total number of patients attending the antenatal centres was 489—just over 10 per cent. of the total births. The medical profession is paying more attention to this subject, says Dr. Buchan, but improvement in the attendances can only result from an increased desire amongst women for skilled supervision.

The number of new houses certified in 1925 was the highest for any one year in the records of the city—namely, 1509; of these 947 were municipal. The number of municipal houses under contract at the end of the year was 1281—1059 of the "A" type, 70 of the "A 2" type, and 152 of the "B" type. In addition to these there were 526 houses, mostly of a superior type, under private construction. In spite of this improvement, many very serious cases of overcrowding could not be dealt with owing to the scarcity of houses. At the close of the year the applicants for new houses numbered 4168, and of these 2715 were ex-Service men, 1617 of whom were living in apartments.

The diagram in the school report shows that Bradford provides every kind of special school. The outstanding feature of the dental work is the increased demand for treatment, which has resulted in the curtailment of the time given to inspection by the four dental surgeons. The work of the ophthalmic surgeon, Dr. W. Oliver Lodge, emphasises the importance of examining the eyes of young infants. More children at the pre-school age are coming under observation, and it is suggested that systematic examinations in infancy will in time secure the development of binocular vision endangered by errors of refraction, will prevent permanent squint, will enable myopia to be dealt with at the most favourable time, will prevent the onset of nystagmus, and will be helpful in the treatment of many other diseases of the eye. A complete scheme is now in operation for cases requiring orthopædic treatment, and Mr. F. W. Goyder is in charge of all such cases at the orthopædic clinic at St. Luke's Hospital, the Lister Lane School for physically defectives, and the surgical tuberculosis wards at Grassington Sanatorium. Children at Grassington requiring operation are transferred to St. Luke's, where a balcony has been put up for open-air treatment and artificial sunlight has been installed. Treatment may last three years, and when the disease has been arrested the children are transferred to Lister Lane School, where their subsequent progress can be watched.

Portsmouth.

Dr. A. Mearns Fraser, in his thirtieth report, tells us that, apart from the dockyard, one of the principal trades is stay-making, in which 1938 women are engaged. The building trades employ 3700, commerce nearly 11,000, and domestic service 10,200 women, whilst the military population averages 20,000. Southsea, the residential part of the town, has a reputation as a health resort from its mild winters and its sunshine record. During 1925 it came out third of the meteorological stations with 1923 hours of bright sunshine. Southsea common, with its 112 acres fronting the sea, was acquired by the corporation during the year.

Only 6 per cent. of the babies die in their first year of life, compared with 16 per cent. 30 years ago. During May an outbreak of scarlet fever affecting 63 persons was traced to ice-cream. This was made by a dairy company at one of its branches only and customers for milk from other branches were not affected. The infecting agent was apparently a boy who helped to make the ice-cream and who went on working up to the day the rash appeared, in spite of a sore-throat which he did not mention for fear of losing his work. One of the features of the outbreak was the short incubation period—a feature which has been noted by other observers in the case of milk epidemics. There were 47 cases of enteric fever with five deaths. Thirty years ago there were seldom less than 300 in the year and in 1900 there were over 1000 cases. Dr. Fraser is sure that the present number would be reduced if people could be persuaded not to eat shell-fish picked up on the seashore near the town. The case-fatality of encephalitis lethargica was high; out of 17 known cases there were nine deaths. Tuberculin is reported to give favourable results in eye affections and for glands and genito-urinary tuberculosis, and injections of collosol calcium have been found beneficial in a few cases, especially those with hæmoptysis. At the venereal diseases clinics irrigation facilities for gonorrhœa are provided daily, including Sundays, for men and women. The number of new cases at the clinics has averaged about 200 each year since 1917, except for the years 1919 and 1920, when the figures reached 342 and 319. The 50 beds at the Treloar Hospital, Alton, reserved for Portsmouth crippled children, have now been supplemented by five beds at Hayling Island. At the municipal maternity home 219 women were confined with one death. The antenatal clinic, conducted at the home, was attended by 589 patients. Plans have been drawn up for a new maternity home and child welfare centre combined. The Royal Naval Maternity Home makes provision for the families of men in the navy and marines, and during the year admitted 273 cases for confinement and conducted antenatal and child welfare clinics. About 65 per cent. of the total births were attended by midwives, who sent for medical help in some 27 per cent. of their cases. The collecting grounds of the town's water-supply are probably the northern downs of Hampshire, and attention is drawn to the possible contamination of this area by the erection upon it of numerous cottages and bungalows without proper drainage or means of refuse disposal. Overcrowding is still serious, and Dr. Fraser is of opinion that the facilities for persons with a very little capital to build for themselves under the Housing Act of 1925 are not enough known, and that the estate acquired by the council on Portsdown Hill is being insufficiently used for building purposes.

The public analyst's report shows that four out of 34 samples of Certified Milk, two out of 12 samples of Grade A (tuberculin tested), and five out of 53 of Grade A failed to pass the tests for their respective grades. The average retail prices of these three milks were 1*s.* 2*d.*, 8*d.*, and 7*d.* per quart respectively.

Oldham.

Dr. James B. Wilkinson says that the chief event of the year was the opening of the hospital part of Strinesdale Sanatorium. Ultimately there will be 56 beds for patients; at present, till the administrative part is renovated, there are only 42 beds. The patients are divided into two classes according as the sputum is positive or negative, and these are housed in separate parts of the building. Children are kept apart from adults and there are observation wards of one and two beds. A view of the new building forms a frontispiece to the report. Dr. Wilkinson shows how Oldham suffers from the smoke of its neighbours on the lower levels to the south-west, south, and south-east. He also points out that the permissible Oldham limit for its own smoke is a liberal one—viz., two minutes in the half hour for a chimney serving two boilers, three minutes for three boilers, and four minutes in the half hour for four or more boilers. He feels strongly that no great improvement will take place in the Oldham atmosphere till the endeavours made to form a smoke prevention district for south-east Lancashire are successful. The chief occupation is cotton-spinning, for which the damp climate is said to be favourable, as, it makes the fibres less liable to break. There are also two large firms making cotton machinery, which employ 20,000 people when working full time, and two coal-mines. The trades are not inimical to health, but there are a few cases

of spinners' cancer attributed to oil irritation, Dr. Wilkinson states, and careless exposure to the cold and damp atmosphere after working in hot mills may be responsible for some cardiac and pulmonary illness.

There are no maternity beds available except in the Poor-law hospital, and a scheme is on foot for acquiring a large house for a maternity home with a babies' hospital to be erected in the grounds. During the last five years the number of untrained midwives have fallen from 12 to three. During the past three winters series of lectures by consultants from Manchester and Liverpool and other places have been arranged for the midwives.

Formerly it was the practice for thrifty people to join building clubs and so erect their own houses, but lately the building of houses for the working class has been relegated to the council, although, Dr. Wilkinson says, there are still ample facilities for those with a few pounds in hand to build either through the coöperative stores or one of the remaining housing companies. There is a considerable shortage of houses and much moral, if not technical overcrowding, and a difficulty in getting unfit houses renovated owing to bad trade and the financial position of small owners of property.

Paisley.

Dr. G. V. T. McMichael points out that the Infectious Diseases Hospital is an old building requiring heavy expenditure on repairs and designed to deal with only three diseases; the erection of a modern fever hospital on the outskirts of the town must soon be faced. He lays emphasis on the value of hospital treatment of pneumonia, especially in view of present housing and economic conditions. Of 345 cases of acute primary and influenzal pneumonia 70 per cent. were admitted to hospital. The mortality at the Fever Hospital was 15·8 per cent., and at the Royal Alexandra Infirmary 16·4 per cent.; the mortality at home was 38·4 per cent. There were 44 notifications of ophthalmia neonatorum, mostly mild, but including six serious cases of gonococcal origin. One case, in which there was serious impairment of vision, was the subject of inquiry by the Scottish Board of Health. The other serious cases were referred at once to the Eye Infirmary, but this one was treated at home by the practitioner in whose practice it occurred, and was the first case of serious impairment of vision which has occurred in Paisley since 1918. The attendances at the antenatal clinic show an increase, and more of the mothers, especially the younger ones, ask for a complete examination early in pregnancy. The new cases numbered 255, more than one-eighth of the 1935 total births. The percentage of new babies brought to the centres whose weight was below normal was higher than in previous years, and this may be the result of the deplorable economic conditions. On the other hand, the cases of rickets numbered only 119, as compared with 180 in 1924. The number of antenatal cases admitted to the Barshaw Maternity Hospital was 168 and the number of confinements 333, the corresponding figures for 1924 being 124 and 296. Hospital treatment for diseases of pregnancy is always available at Barshaw, and this fact helps to promote the success of the antenatal work. There is a lack of accommodation for early cases of pulmonary tuberculosis and also for surgical tuberculosis in children, and a scheme is on foot to put up a county sanatorium of 110 beds at a cost of £76,000, which, it is hoped, will make good these deficiencies. Dr. Hugh C. Donald, of the venereal diseases clinic, reports striking results from the treatment of syphilis in women during pregnancy.

Progress is being made in housing, and Dr. McMichael is enthusiastic about the last two estates acquired by the council, on which it is proposed to erect 849 houses. The three municipal hospitals are supplied with Certified Milk, and about 16 gallons of this milk is retailed in the town. About one-third of the daily milk-supply is pasteurised and bottled at the Coöperative Creamery.

SCHOOL MEDICAL SERVICE.

Name of county.	No. on roll.	Av. elem. school attendance.	No. of routine children examined.	No. of special examinations and re-inspections.	Percentage of children found on routine examination requiring treatment.‡
Hertfordshire ..	39,888	—*	14,055	—†	20·1
Northamptonshire ..	26,906	—*	7,940	2,508	24·6
Lincolnshire: Holland ..	11,130	9,635	2,997	1,686	14·0

* Not given. † No reinspections; 60 specials.
‡ Excluding dental defects and uncleanliness.

Hertfordshire.

Dr. H. Hyslop Thomson sums up the work of medical inspection which is carried out by 20 assistant school medical officers who are, for the most part, medical officers of health of their localities. This arrangement is in some ways advantageous, but unless a clear policy is laid down and close coöperation maintained among the assistants, the results of local inspection tend to be unequal. In this case, among other things, the various methods adopted locally for the prevention of the spread of infectious disease and for closure of schools appear to lack coördination, and the fact that no reinspections have taken place indicates that the system for following up cases cannot be altogether satisfactory. Arrangements are made by the county for treatment of tonsils and adenoids at local hospitals and for defective vision by local ophthalmologists, while an orthopædic scheme is now in active being. Only two minor ailment clinics exist in the county, most of this work being carried out by the district nurses. At present there is apparently only one dentist employed, but further dental aid is contemplated. No definite provision is made for mentally defective children, though the county runs an excellent residential school for the feeble-minded, and Dr. Thomson reports fully on the conduct and progress of this institution. In an inquiry on rural children who walk a long way to school and stay there for the midday meal, Dr. Thomson concludes that these children, while thinner than those who live near the school, are healthier and more resistant to catarrhs and infectious disease. He insists, however, on the necessity for ensuring that these children have their school meal in comfort.

Northamptonshire.

Dr. Charles E. Paget remarks on the increasing interest of teachers and parents in the school medical work, as shown by the presence of 69·6 per cent. of the parents at the inspections. Teachers weigh and measure the children, test their eyesight by Snellen type prior to the medical officer's visit, and report to the S.M.O. the steps taken by the parents to secure treatment. Arrangements are rapidly being made, varying in individual schools, for drying rural children's clothes, for supplying dry slippers and socks, and for providing warmth, shelter, and hot drinks for those children who have their midday meal in school. The council make no definite provision for treatment of tonsils and adenoids or for treatment of ear and external eye conditions. Minor ailment clinics are in being at Wellingborough and Rushden, otherwise this treatment is given by the district nurses. No mention is made of open-air classes or schools, and there is no special provision for mentally or physically defective children, and no supervision of the feeble-minded who are not attending school. Dr. Paget finds that 141 mentally defective and 108 crippled children are in attendance at elementary schools. A scheme for orthopædic treatment is now before the council.

Lincolnshire: Holland.

Dr. H. C. Jennings reports that medical inspection in the secondary schools has been undertaken for

the first time this year. The sanitary condition of town schools in the district is much better than that in the country areas, but even allowing for special conditions which exist in rural localities, much needs to be done if these schools are to be rendered structurally and hygienically sound. Dr. Jennings holds that no child under 7 years of age should be expected to read from books and that from 7 years onwards uniform standards of types, of which he gives specimens, should be used. A scheme for dental treatment, including a dental van, was to be in full operation in the early part of 1926. Minor ailment clinics are held in six of the most important schools, and the following up work is carried on by nurses. The treatment of visual defects is in the hands of a consultant ophthalmologist, but no arrangements are made by the council for treatment of tonsils and adenoids, nor is special provision made for mentally or physically defective children.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED OCT. 9TH, 1926.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox 121 (last week 96); scarlet fever, 1851; diphtheria, 1186; enteric fever, 91; pneumonia, 634; puerperal fever, 55; puerperal pyrexia, 180; cerebro-spinal fever, 4; acute poliomyelitis, 46; acute polio-encephalitis, 5; encephalitis lethargica, 33; dysentery, 17; ophthalmia neonatorum, 141. There were no cases of cholera, plague, or typhus fever notified during the week. Only one case of small-pox was reported from the London area, the remainder, as before, from the counties of Derby, Durham, Lancaster (Ashton-in-Makerfield), Northumberland, Nottingham (one only), and Yorks, West Riding.

Deaths.—In the aggregate of great towns, including London, there was 1 (1) death from small-pox, 5 (0) from enteric fever, 6 (0) from measles, 3 (1) from scarlet fever, 22 (4) from whooping-cough, 36 (8) from diphtheria, 221 (49) from diarrhœa and enteritis under 2 years, and 36 (11) from influenza. The figures in parentheses are those for London itself. The small-pox death was of a case belonging to the Metropolitan Borough of Lambeth.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Lt. Comdr. O. D. Brownfield to be Surg. Comdr.

ROYAL ARMY MEDICAL CORPS.

Col. C. J. O'Gorman, late R.A.M.C., retires on retd. pay.

Lt.-Col. and Bt. Col. H. H. Norman, from R.A.M.C., to be Col.

Maj. M. F. Grant to be Lt.-Col.

Capts. D. G. Cheyne, P. A. Opie, S. Fenwick, G. W. Will, and D. C. Scott (Prov.) to be Majs.

Lt. (on prob.) H. McVicker, from the secd. list, is restd. to the estabt.

2nd Lt. R. A. M. Humphrey, from the Gen. List, Aberdeen Univ., O.T.C., to be Temp. Lt.

TERRITORIAL ARMY.

Capt. R. Errington to be Lt.-Col. and to command the 149th (Northumbrian) Field Amb.

Capts. J. A. C. Scott and A. C. M. Savege to be Majs.

Capt. (Prov.) E. R. Woodroofe is confirmed in his rank.

TERRITORIAL ARMY RESERVE OF OFFICERS.

Lt.-Col. J. W. Craven, from the Active List, to be Lt.-Col.

ROYAL AIR FORCE.

Squadron Leader B. F. Beatson is placed on the retired list at his own request.

Flight Lt. H. R. Peek (temp. Capt. Army, Dental Surgeon) relinquishes his temporary commission on return to Army duty.

INDIAN MEDICAL SERVICES.

Majs. B. E. M. Newland, O. A. R. Berkeley-Hill, W. L. Harnett, J. D. Sandes, A. H. Napier, G. Holroyd, D. L. Graham, E. B. Munro, J. A. S. Phillips, P. M. Rennie, and H. M. Inman to be Lt.-Cols.

Capts. J. B. de W. Molony, H. G. Alexander, Kanshi Ram Batra, Bawa Harkishan Singh, Pindi Dass Chopra, A. H. Harty, G. Shanks, and R. L. Vance to be Majs.

Correspondence.

"Audi alteram partem."

PASTEURISATION OF MILK.

To the Editor of THE LANCET.

SIR,—I thank your correspondents who have taken an interest in my letter of August 14th. The question may be brought roughly under three headings:—

(1) *Is general pasteurisation in the interest of the consumer?*—My contention is that pasteurisation as usually carried out is used to the advantage of the dairyman rather than of the consumer, and to support this view I stated that a dairy manager had informed me that he keeps pasteurised milk as long as 36 hours in his shop before sale and that this would be impossible if the milk were not pasteurised. On Sept. 30th I asked my wife to order an extra pint of fresh milk and one of pasteurised to be delivered early on the morning of Oct. 1st. These were kept for a matter of five and a half hours from 6.30 A.M. to noon, at a temperature rising from about 40° to 60° F., before a bacteriologist made counts on the samples. The results of the bacterial counts were as follows:—

Raw milk	100,000 per c.cm.
Pasteurised milk	3,450,000 ,,

Both samples contained gelatin-liquefying bacteria, the pasteurised being worse than the raw milk; it was hardly necessary under these circumstances to test for the colon bacillus. By 3 P.M. a colleague remarked to me that the pasteurised milk was beginning to smell sour, and it curdled long before the sample of raw milk.

In order to check these results on Oct. 6th I obtained further samples of fresh and pasteurised milk. After keeping for eight hours these gave the following bacterial counts:—

Raw milk	60,000 per c.cm.
Pasteurised milk	1,000,000 ,,

Both samples contained the colon bacillus. The fresh milk contained no preservatives.

I take it that Dr. Moore had his sample tested to find out that it was raw milk and not pasteurised, since I can assure him that most samples of milk purchased in the streets of London are pasteurised. I cannot agree with him that the presence of the colon bacillus denotes contamination with cow dung; it is suspicious and I should think, from my experience, that most samples of raw milk collected from country farms would contain it, but the streets are full of this bacillus and most milk delivered from a milk-can at street doors contains them.

As regards the safety of milk which has been pasteurised commercially Dr. C. G. Grulee, of Chicago, states ("Infant Feeding") that commercial low temperature pasteurisation is often carried out on bad milk and that the time of delivery after heating is so long that bacterial growth is very great. Magee and Harvey, of the Rowett Research Institute, Aberdeen,[1] state that pasteurisation improves low-grade cow's milk and makes it a marketable product for many hours after being milked, but it should be noticed that they specify hours and not prolonged keeping in a shop. If Dr. Moore had taken my two sentences together he would have read me as stating: "Pasteurised milk may go bad without curdling, if kept for any length of time. Curdling is still looked on as the signal of milk going bad . . ." and I added that the former sentence was not only an expression of my own experience, but also that of a dairy manager.

Dr. Moore calls my attention to the work of Ayers and Johnson, but the still more recent work of Prof. Orla-Jensen[2] shows that lactic acid bacteria, which survive low temperature pasteurisation, only grow slowly at low temperatures and that the milk so treated may eventually become worse if treated by high temperature pasteurisation. Prof. Orla-Jensen is professor of biochemistry in the Polytechnic

[1] Biochem. Jour., 1926, xx., 873.
[2] Dairy Bacteriology, translated by Arup, 1921, p. 85.

College, Copenhagen, and was formerly Director of the Swiss Experimental Dairy Station, and his translator is chief chemist to the English Margarine Works. As to the necessity for pasteurisation, it is well to remember that, a year or two ago, we were informed that dairymen and others could not comply with the report of the Departmental Committee on preservatives in cream and other articles of food, but they seem to be managing to toe the line. In many of the large American towns the standards for ordinary raw milk are 500,000 per c.cm. or even less, and it should be possible to emulate this standard generally in our country.

(2) *If pasteurised milk is to be sold ought not the public to be educated as to the difference between pasteurised and raw milk, or any other grade of milk?*—Even where people observe a small disc at the top of the bottle with the word "pasteurised" among a lot of other information, do they know or take the trouble to find out what it means? Prof. Kenwood, who is, I believe, a public analyst, inquires what the local health authorities are doing if dairymen do not know the difference between various grades of milk. Has he systematically been through his borough to find out whether they do? If he has, I think he is exceptional. I was told a few days ago by a shopkeeper that she stocks sterilised milk only, because it is simpler and also because her wholesaler, a sterilised milk company, informed her that sterilised milk was safest. Incidentally it may be of interest to know that the common test, to find out whether sterilised milk is good or bad, is to hit the bottom of the bottle before opening; if there is a hollow sound the milk is good, if not the milk is bad.

(3) *Is pasteurised milk equal to raw milk in quality?*—Dr. Moore says that it is not. I have to thank him for giving me, privately, the reference to Prof. Pierre Budin's statement concerning the antiscorbutic properties of sterilised milk. I would point out that this statement was made before the subject of vitamins was properly understood, and in connexion with such work Barnes and Hume[3] draw attention to the fact that it is never stated definitely whether all antiscorbutics have been excluded, while Dr. Grulee notes that as far as possible Budin used "wet-nurses." If we consult Budin's work, "The Nursling" (translated by Maloney), we find (p. 27) that for weakly infants the milk is made to trickle into their mouths directly from the nipple by exerting pressure upon it; (p. 50) that when an infant is born weakly it is either (*a*) entrusted to a wet-nurse, or (*b*) nourished by the mother herself; (p. 122) Budin explains his system of mixed feeding and comments on the fact that he was at first condemned by his medical colleagues for adopting such a course.

In the light of modern research it is obvious that Budin's belief in the antiscorbutic properties of sterilised milk cannot be accepted, though it is fair to note that he sterilised his milk under such conditions that air was excluded, and laid it down that the sterilised milk was only to be warmed in the bottles in which it had been sterilised before use. Prof. Plimmer has shown that re-heated pasteurised milk contains no antiscorbutic properties.

In reply to the question why, if we cook bread, vegetables, meat, &c., we may not cook milk, may I, with all respect, ask whether it is the custom to buy cabbage cooked or to cook it at home? The chief point I made in my former letter was that milk is largely used for the preparation of infants' foods in the home, and as such is cooked in the process. Nobody advocates the consistent double-cooking of their own food; why should we double-cook an infant's food?

Those interested in the feeding properties of pasteurised milk as compared with raw milk should refer to the valuable papers of Daniels and Stearn[4] and Magee and Harvey.[1]

I am, Sir, yours faithfully,

Oct. 9th, 1926. THOMAS MCLACHLAN.

[3] Biochem. Jour., 1919, p. 325.
[4] Jour. Biochem., 1924, lxi., 225.

HÆMORRHAGE ASSOCIATED WITH PERITONSILLAR ABSCESS.

To the Editor of THE LANCET.

SIR,—In your correspondence columns on July 17th (p. 149) Mr. A. J. Wright reported a case of severe hæmorrhage following spontaneous rupture of a peritonsillar abscess which he treated by dissecting out the tonsil and stitching up the fossa. I have for many years adopted this procedure in every case of peritonsillitis, slight or advanced, and have been uniformly pleased with results. I began by lifting off the anterior pillar to allow pus to escape in place of the usual incision. I then proceeded to finish the dissecting out of the tonsil, and for ten years have adopted this method for all enucleation cases. I use an elevator like the one figured in D. McKenzie's book. Where adhesions are very strong I use a long pair of slender scissors curved on the flat. For grasping the tonsil, nothing is so satisfactory as a blunt guillotine. I only resort to a volsellum for the preliminary stage when I cannot engage the tonsil with a guillotine.

In 34 years I have had only three cases of severe hæmorrhage, one in a child at the Children's Hospital, "primary," and overcome with artery forceps; one in a young adult at the Melbourne Hospital, a "partial" hæmophiliac, which gave us anxiety for months, and one in private, which occurred in an adult female, 36 years, which was also stopped with artery forceps. I had one death 30 years ago from inhalation of large blood clot, and I attributed it to the head dorsi-flexed position plus chloroform anæsthesia; a second death from ethyl chloride anæsthesia in a gross case of congenital syphilis; and a third in a case of peritonsillar abscess with septic laryngitis. This last case was a desperate one and occurred in a medical colleague.

I never use ligatures of any kind except in those rare instances where the posterior pillar has been badly torn or cut. I have no record of number of cases, but besides a large private practice I have been surgeon to four hospitals in Melbourne, and for some years did 40–50 cases a week, so I consider I must have done 30,000 cases at least.

I am, Sir, yours faithfully,

W. KENT HUGHES, M.B. Lond.,
Late Surgeon to Children's Hospital, Melbourne, and Clinical Surgeon to Melbourne Hospital,
St. Vincent's Hospital, and Metropolitan Mission, Melbourne.

Sept. 10th, 1926.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.

To the Editor of THE LANCET.

SIR,—As there seems to be some misapprehension in the public mind as to the future policy of this hospital, I should like to explain that although the site and buildings have been sold to our next-door neighbours, the work of this institution has *not* been absorbed or taken over by Charing Cross Hospital. Owing to lack of accommodation, and the increasing demands upon its resources, this old and useful eye hospital, founded 110 years ago, is removing to a new freehold site which has been purchased by the governing body in Broad-street, W.C.2, upon which will be erected one of the finest and most up-to-date institutions of its kind in the kingdom. Tenders for construction of the new building will be received shortly, and it is hoped to commence building operations before the end of the year. In conclusion, I might add that one of the conditions of sale to Charing Cross Hospital was that possession would not be given until the new building is ready for occupation, so that our work of treating sufferers from injuries or diseases of the eye can be transferred to the new hospital without closing for a day. This transfer is expected to take place about the end of March, 1928.—I am, Sir, yours faithfully,

JOHN H. JOHNSON,
Secretary, Royal Westminster Ophthalmic Hospital, King William-street, West Strand, W.C. 2.

Oct. 14th.

PRINCIPALS AND LOCUM TENENTS.

To the Editor of THE LANCET.

SIR,—Some misunderstanding appears to exist with regard to the protection which the two English defence societies afford their members when threatened with proceedings owing to the acts of locum tenents. The Council of the Medical Defence Union passed the following resolution on Jan. 21st, 1926 :—

"That from and after the date of this resolution the Council may in its discretion assume responsibility for any claim made upon a member in respect of the act or omission of any registered medical practitioner, whilst temporarily employed as locum tenens for such member."

The Council of the London and Counties Medical Protection Society passed an identical resolution, and the position of the two societies in this respect is precisely the same.—We are, Sir, yours faithfully,

HUGH WOODS,
General Secretary, London and Counties Medical Protection Society, Ltd., Victory House, Leicester-square, W.C.

JAMES NEAL,
General Secretary, Medical Defence Union, Ltd., 49, Bedford-square, W.C.

Oct. 13th, 1926.

MENDELIAN VARIATION IN BACTERIA.

To the Editor of THE LANCET.

SIR,—Your annotation of Sept. 25th (p. 660) with this title raises four points which call for reply.

(1) You write: "Technically such experiments ought to begin with a single cell isolated with all the certainty which is available. Dr. Stewart seems to have taken no particular precautions about the purity of his cultures."

Burri's single cell culture to which you refer has been extensively tried in this class of research. Bernhardt [1] reports on it as follows: While we used Burri's single cell culture for the confirmation of our results in our first experiments on dysentery bacteria, we have at a later stage satisfied ourselves in agreement with the other workers, that we could achieve the same results by the usual methods of bacteriology (efficient dilution of the initial material, laying out a series of plates). We have, therefore, abandoned Burri's method, which is tiresome, a waste of time, and not always applicable. My technique has consisted of the usual methods of bacteriology outlined in this quotation.

(2) You write: "It is also necessary to assume non-viable recessives . . . . if mutabile on ordinary media is really a heterozygote."

But my argument is that mutabile will not segregate without the stimulus of the specific sugar, and therefore this assumption is not necessary.[2]

(3) Variations of the colon typhoid bacteria "have been discussed as examples of mutations, adaptive variations, acquired heritable characters . . . . Dr. Stewart gives another explanation."

I, on the contrary, consider Mendelian variation and mutation to be the same as adaptive variation and acquired heritable characters, all four arising from segregation of allelomorphs. The type of segregation studied in bacteria, which is best called restricted segregation, I consider to be related to gametic segregation in the following manner. In restricted segregation a single sharp-pointed external stimulus (e.g., lactose) impinges on one pair of allelomorphs only, and causes that pair alone to segregate in adaptation to the stimulus. In gametic segregation, on the other hand, a complex mass of external stimuli bears on the germ-cells, and causes segregation of many, if not of all, the allelomorphs. This mass of external stimuli consists of the hormones of the parent in their adult condition (senility in protozoa, see Calkins and Woodruff). Gametic segregation is possibly also adaptive and represents the reaction of the germ-cells to the maturity (senility) of the parent, reaction and adaptation being equal and opposite. Examples of restricted (= somatic) segregation are to be found not only in bacterial variation, but also in bud variation in higher plants and probably in acquired immunity to some diseases in higher animals, and in non-parasitic tumours.

(4) You write: "The theory as a whole rests on a slender basis, it postulates somatic segregation . . . . the production of recessive mutations by environment . . . . and non-viable dominants."

For a good example of somatic segregation in higher plants see the case of mosaic seed capsules in the hybrid between *Datura stramonium* and *D. lævis*.[3] *Non-viable dominants.*—Since writing the paper under review I have on one occasion found a homozygous dominant, paracolon, in subculture from a thoroughly purified heterozygote, mutabile.

I have almost completed a paper which elaborates and continues the subject under review.

I am, Sir, yours faithfully,

F. H. STEWART,
Major, I.M.S. (retd.).

Edinburgh, Oct. 11th, 1926.

*** It is obviously impossible to discuss briefly whether Dr. Stewart is right in considering Mendelian variation and mutation to be the same as adaptive variation and acquired heritable characters. In that proposition he raises one of the great biological problems, and we hope that his further researches will convince everyone that he has solved it.—ED. L.

[1] Ueber Variabilität pathogener Bakterien, Zeitschr. für Hygiene, 1915, lxxix., 241.

[2] See also Dobell, Jour. Genetics, 1912, ii., 343.

THE RELATION BETWEEN CANCER AND TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—In the annotation on this subject in your issue of Oct. 16th it is stated that Dr. T. Cherry, of Melbourne, recalled an observation made by Mr. W. R. Williams that when several members of a family had died of phthisis the survivors were very apt to die of cancer. As an insurance medical officer of several years' experience, and one who has had, therefore, great opportunities of studying many family histories, I have been frequently struck—prior to Mr. Williams's observation—by the concurrence of these two complaints in members of families at different ages. I have questioned whether the explanation is to be found in the fact of a mere coincidence or of the different age incidence of the two diseases, or whether possibly there is some deep real connexion between the two. As Mr. Williams stated, a further inquiry is needed.

I am, Sir, yours faithfully,

ARTHUR T. DAVIES,
Chief Medical Officer to the North British and Mercantile Insurance Co.

Oct. 18th, 1926.

EOSINOPHILIA AND ACIDOSIS.

To the Editor of THE LANCET.

SIR,—When views are imputed to an author by a misunderstanding of his book there is excuse to take note. In a notice of my book on Asthma (THE LANCET, Sept. 25th, p. 654) your reviewer says: "When the author discusses theory he often becomes too hypothetical, as when he suggests that the large number of eosinophil cells are present in asthma in order to absorb acid and so preserve the alkalinity of the blood." I did not suggest that these cells are present *in order to* absorb acid, but I did suggest that their presence in such number might be the *result* of the chloride shift known to occur in cases of acidosis. So far as I am aware no other explanation of eosinophilia has been given; at any rate, it is a feasible explanation and fits the case, for the degree of eosinophilia is in proportion to the persistence of the asthma and is an excellent guide to prognosis. I admit, however, that I am not conversant with the

[3] Darwin: Animals and Plants under Domestication, i., 392; and Bateson: Mendel's Principles.

relationship of acidosis to eosinophilia in diseased states other than asthma and characterised by eosinophilia. Certainly eosinophilia does not characterise epilepsy which Cuneo claims to be an acidosis, which, like him, I have known to be produced by faulty diet and hygiene similar to those which produce asthma, and which I have cured by *early* attention to those errors.

To one other point I may be permitted to refer. Your reviewer says that another writer asserts removal of polypi may make asthma worse. For a quarter of a century I have been removing polypi in cases of asthma and have never seen a case that was not benefited. Where a case seems to have been made worse your reviewer may be quite sure that it was not efficient operation that made the asthma worse. Efficient operation is often not easy and post hoc is not propter hoc. Greater folly than leaving polypi untreated in asthmatics it would be hard to conceive, but it may be a product of the present craze about anaphylaxis.

I am, Sir, yours faithfully,

Glasgow, Oct. 9th, 1926. JAMES ADAM.

*** The reviewer, while believing that he has nowhere misunderstood Dr. Adam, says that any suggestion on his part of a teleological cause for the phenomena was accidental.—ED. L.

ANÆSTHETICS IN UROLOGY.

To the Editor of THE LANCET.

SIR,—In the October issue of the proceedings of the Royal Society of Medicine, under the discussion on anæsthetics in urology, Dr. F. E. Shipway mentioned that "one of the anæsthetists at St. Peter's Hospital, being a Scotchman and not converted to modern methods, still used chloroform for his cases, and the resident medical officers had told the speaker (Dr. F. E. Shipway) that there was a distinct tendency to uræmia on the part of those patients, as compared with those who received spinal anæsthesia." I cannot compliment Dr. Shipway on the manner in which he refers to his colleagues at St. Peter's, but if it is a modern method of comparing his particular scientific work to that of others, I am content to remain old-fashioned. After remarking on the "tendency to uræmia" in the patients given chloroform, he says that those given ether tend towards bronchitis. Surely this is comparable to the layman's phrase, "a tendency to consumption." It would be interesting to know where the tendency ceases and the disease begins. Possibly Dr. Shipway has a tendency to exaggerate the importance of spinal anæsthesia in urinary surgery.

I am, Sir, yours faithfully,

Oct. 18th, 1926. J. D. SPEID SINCLAIR.

Obituary.

HENRY PORTER D'ARCY BENSON, M.D., F.R.C.P., F.R.C.S. EDIN.

NEWS has reached this country of the death of Dr. D'Arcy Benson at Kimberley on Oct. 6th. He had spent the last few years in South Africa because poor health prevented him working in the British Isles. Dr. Benson was the eldest son of the late Dr. John R. Benson, of Beer, in Devon, and was 59 years of age. He studied medicine at the Universities of Edinburgh and Melbourne and was for some time in practice at Gympie, becoming a member of the Queensland Legislative Assembly. Returning to this country he settled in practice at Pontrilas in Herefordshire, and later at St. Peter Port, Guernsey, where he lived for many years. Here Dr. Benson was able to devote some of his leisure to yachting, and in his 20-ton cutter made many cruises along the French and English coasts. In 1911, however, he had to leave his Guernsey practice owing to a breakdown in health which followed infection from a patient upon whom he was operating. He went to Ireland and became resident physician at Farnham House, a mental home in Dublin. Unfortunately, there also ill-health somewhat interfered with his activities, though during the late war he was able to accept a captain's commission in the Royal Army Medical Corps, acting as surgical specialist.

Dr. Benson married, in 1892, the daughter of Mr. S. H. Gabriel, of Calne, in Wiltshire. She survives him with four sons, two of whom—Dr. John Benson and Dr. Wilfred Benson—are members of the medical profession. All four sons saw service in the war.

WALTER THOMAS BEEBY, M.D. ST. AND., M.R.C.S. ENG.

THE death took place in London on Sept. 29th of Dr. W. T. Beeby in his eighty-fifth year. Dr. Beeby was a student of Guy's Hospital, where he was later house surgeon. He graduated as M.D. at the University of St. Andrews in 1862 and three years later went into practice at Bromley in Kent in partnership with the late Mr. J. W. Ilott. On Mr. Ilott's retirement and after his death he continued in practice with his son, Dr. H. J. Ilott. It was largely owing to Dr. Beeby's influence that the Bromley Cottage Hospital was founded in 1869, and he was the first medical officer. The hospital was at first very small, but has since been much enlarged and rebuilt, and is now a well-equipped institution with over 40 beds, having a large staff both of local medical men and of London consultants. Dr. Beeby left England in 1898 and went to live at Rapallo on the Italian Riviera, where he practised for seven years among English visitors and residents and where he had much to do with the building of the English Church of St. George. Later he gave up all medical work and went to live during the winter and spring months at Levanto, further along the coast. Dr. Beeby had a taste for architectural and antiquarian research and was the author of a paper on the Church and Manor of Bromley, and of a little book on the Parish Church.

He married, in 1879, Miss Constance Emily Finley, daughter of the Rev. John Finley, who survives him.

CHARLES STENNETT REDMOND, M.D. N.U.I., L.R.C.P.I.

THE death took place on Oct. 13th of Dr. C. S. Redmond in his eighty-fourth year. He was educated at the Catholic University of Dublin and practised in Manchester from 1900 to 1909, latterly residing at Popefield, Queen's County. The subject of dietetics always interested him and in the district of Manchester where he worked he gave many interesting lectures on food, being a strong believer in the need for educating the public in this subject. In the last part of the war he worked as resident medical officer at the Trafford Hall Red Cross Hospital. The National University of Ireland conferred on him the honorary degree of M.D. in 1915. Dr. Redmond was succeeded in his Manchester practice by his son, Dr. C. H. S. Redmond.

ROBERT PARRY, J.P., M.B. LOND.

Dr. Robert Parry, who died on Oct. 12th, was 71 years of age, and had been in practice at Carnarvon for 43 years. He studied medicine at Owens College, Manchester, and at Guy's Hospital, qualifying as M.R.C.S. in 1879. On going into general practice he became surgeon to H.M. Prison at Carnarvon, medical

officer to the local infirmary, and police surgeon. He took a keen interest in medical and public affairs, and was at one time president of the North Wales branch of the British Medical Association. He entered the town council four years after settling in Carnarvon and remained a member of it till the end of his life. Dr. Parry's fellow citizens showed their appreciation of his work by electing him alderman and mayor in successive years and by making him a freeman of the borough. He was also justice of the peace for the county. He leaves a widow, three sons, and two daughters.

REOPENING OF THE WELLCOME HISTORICAL MEDICAL MUSEUM.

THE rearranged Wellcome Historical Medical Museum was opened on Oct. 14th by Sir Humphry Rolleston, who expressed in his opening remarks the founder's regret at being prevented by philanthropic work in America from receiving his guests personally. Sir Humphry Rolleston referred to the great value of the collection and to the debt we owe to those who have worked to forward the study of medical history in this country.

The Opening Address.

Sir ARTHUR KEITH then delivered an address on "What Museums Should do for Us." He began by showing that geologists in the last century had written the history of the earth, and also of the animals that inhabited it, on their museum shelves, and that history was coming more and more to be written in this way. Pitt-Rivers was the patron saint of curators, and what he had done for human culture in general Mr. Wellcome had done for medicine. The difficulty of illustrating the evolution of medicine by a museum was that, whereas a geological collection illustrated facts, a medical collection had chiefly to illustrate fancies. Primitive medicine and its apparatus were a logical outcome of primitive beliefs based on speculations about the human spirit. No one who studied history intelligently could fail to realise that Mr. Wellcome's Hall of Primitive Medicine, with its totems, fetishes, and mascots, was the primitive counterpart of the stethoscope and the bismuth meal, but having an inner significance which modern apparatus had not. Even educated people still treasured mascots, preferred quacks to qualified men, and believed in spirits. The primitive stage was not yet over. The function of a museum was to foster knowledge, and the money invested in it bore fruit in leaders and teachers. It must be more than a storehouse of material for students; its staff must be students themselves, permeated with the love of knowledge and knowing how to extend it. Besides being active members of learned societies they must give direct education, which needed much discrimination and the art of the window-dresser. Finally, by helping poor men to produce great work, museums were a worthy use of wealth in the service of the community.

Sir FREDERICK KENYON, director of the British Museum, and Sir D'ARCY POWER proposed and seconded a vote of thanks to Sir Humphry Rolleston. A vote of thanks to the founder was proposed and seconded by Mr. W. G. SPENCER, President of the Section of Medical History (Royal Society of Medicine), and Dr. J. D. COMRIE, lecturer in medical history to the University of Edinburgh. It was carried with enthusiasm and acknowledged on behalf of the founder by Dr. C. M. WENYON, director in chief of the Wellcome Bureau of Scientific Research.

The New Museum.

The Wellcome Museum contains a large and well-chosen collection of rare objects, pictures, sculptures, manuscripts, early printed books, &c., illustrating the evolution and practice of medicine and its allied sciences throughout the world in all ages. Founded in 1913 and steadily enlarged since, the museum has no exact counterpart in this or any other country. The exhibits have now been arranged in new cases with superimposed glass shelves, which allow more objects to be shown in the space allotted without overcrowding. No description could convey what a student may learn by spending five minutes—or five hours—in the Italian or Turkish drug shop, and the Primitive Section is a deeper essay in human psychology than was ever printed. A number of additions have been made to the portraits of famous men, to the charming little pomanders and scent-bottles, and to many other sections, and the most interesting new exhibit is the "Lister Ward," reconstructed from the actual Glasgow material and fitted with the original equipment. Personal relics of Lister displayed near by include his academic robes, diplomas, and research apparatus, and the carbolic sprays he used when he first introduced antiseptic surgery.

Wellcome Historical Medical Museum. (*Copyright.*)

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At a quarterly meeting of the Council on Oct. 14th Sir Berkeley Moynihan, the President, reported that the Supplementary Charter which had been approved by the King in Council on July 26th had been duly received. The annual report of the Council to be presented to the Fellows and Members at the annual meeting on Nov. 18th was approved and will be circulated. The President also reported that the Thomas Vicary Lecture on the Significance of Anatomy will be delivered by Prof. G. Elliot Smith on Thursday, Nov. 4th, at 5 P.M.; and that the Bradshaw Lecture on Reconstructive Surgery of the Hip-joint will be delivered by Prof. Ernest W. Hey Groves on Thursday, Nov. 11th, at 5 P.M.

Mr. Kenneth Swire Southam, late of Epsom College, was nominated as the thirty-fourth Jenks Scholar.

The diploma of Fellow was conferred upon John Lewin, of Guy's Hospital.

Diplomas of Member were conferred upon the following:—

Winifred M. de Kok, Cape and Royal Free; T. C. Hunt, Oxford and St. Mary's; S. M. Mallick, Lahore and Guy's; A. W. L. Row, Oxford and St. Bart.'s; H. Smith, Cambridge and St. George's; Karin Stephen, Univ. Coll.; H. Syed, Bombay and King's Coll.; and J. G. T. Thomas, Cambridge and St. Mary's.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—The annual dinner will be held at the Piccadilly Hotel, London, W. 1, on Thursday, Nov. 18th, at 7.10 for 7.30 P.M. Ladies are invited. Members are asked to give early notice to the executive secretary of their intention to be present.

NORTH-WESTERN TUBERCULOSIS SOCIETY.—The opening meeting of the new session will be held at the tuberculosis offices, Joddrell-street, Hardman-street, Deansgate, Manchester, on Thursday, Oct. 28th, at 3.15 P.M., when Dr. Alfred Adams, medical superintendent, Liverpool Sanatorium, Delamere, will give his presidential address on Tuberculosis: the Prospect.

ROYAL INSTITUTION.—On Tuesday, Nov. 2nd, at 5.15 P.M., Mr. G. W. C. Kaye, D.Sc., will deliver the first of three lectures on the Acoustics of Public Buildings, and on Tuesday, Nov. 23rd, Sir William Bragg will begin a course of four lectures on the Imperfect Crystallisation of Common Things. On Thursday afternoons, beginning on Nov. 4th, there will be two lectures by Sir Edgeworth David on Antarctic Exploration Past and Future; three by Dr. R. R. Marett on the Archæology of the Channel Islands, and two by the Editor of THE LANCET on Early Medical Literature (Dec. 9th), and Medical Literature in Relation to Journalism (Dec. 16th). The Juvenile Lectures will be delivered by Prof. A. V. Hill on Nerves and Muscles: How We Move and Feel. They will begin on Dec. 28th.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—Practitioners interested in the series of lectures on Emergencies in Medicine and Surgery should note that Mr. Herbert J. Paterson will lecture on Monday, Oct. 25th, on Gastric Hæmorrhage and Perforation of Ulcers, and that on Thursday, Oct. 28th, Mr. Arthur Cheatle will lecture on Emergencies in Aural Disease. The lectures will be delivered in the Lecture Hall of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., at 5 P.M. On Friday, Oct. 29th, at 5 P.M., at the Royal Westminster Ophthalmic Hospital, Charing Cross, Mr. C. L. Gimblett will give a lecture-demonstration on the Investigation of Visual Fields. Both lectures and demonstration will be open to members of the medical profession, without fee. During November a course in Venereal Disease will be given at the London Lock Hospital. From Nov. 15th to Dec. 4th a course in gynæcology and diseases of children will be available at the Royal Waterloo Hospital. Special reference will be made to endocrine deficiency, to diseases of the blood, thyroid, breast, and stomach, and to gynæcological diagnosis. The St. John's Hospital will hold a clinical course, with bi-weekly lectures in dermatology, from Nov. 15th to Dec. 11th. If desired a course in pathology can also be arranged. From Nov. 22nd to 27th there will be a week's course in Rectal Diseases at St. Mark's Hospital. For those who have little time at their disposal there are two late afternoon courses: from Nov. 1st to 13th, 4.30 to 6 P.M., a course in general medicine, surgery, and the specialties at the Hampstead General Hospital; and from Nov. 22nd to Dec. 18th a series of lecture-demonstrations on selected neurological cases in the West End Hospital, 73, Welbeck-street, London, W., at 5 P.M. Copies of all syllabuses, of the General Course Programme, and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship at 1, Wimpole-street, London, W. 1.

UNIVERSITY OF WALES.—In the second part of the examination for the diploma of public health Dr. Doris Williams has satisfied the examiners.

Messrs. Cassell and Co. announce the publication of "X Ray Diagnosis: A Manual for Surgeons, Practitioners, and Students," by Mr. J. Magnus Redding, senior surgical radiologist to Guy's Hospital. It is illustrated with 224 skiagrams from Mr. Redding's collection.

MEDICO-LEGAL SOCIETY.—A meeting will be held at 11, Chandos-street, Cavendish-square, W. 1, on Thursday, Oct. 28th, at 8.30 P.M., when a paper will be read by Dr. John Glaister, Jun., on the Results of Recent Experimental Work upon the Serological or Precipitin Test for the Detection of Blood, considered from the Medico-Legal Aspect. A discussion will follow. Members may introduce guests on production of a member's private card.

UNIVERSITY OF BRISTOL.—The annual dinner of the Association of Alumni (London branch) will be held at the Hotel Cecil, Strand, on Friday, Oct. 29th, at 7.30 for 7.45 P.M. Lord Haldane will preside, and Dr. T. F. Sibly, principal officer of the University of London, will be the guest of the evening. The dinner will be followed by dancing. Application for tickets may be made to Dr. Elizabeth Casson, Holloway Sanatorium, Virginia Water.

UNIVERSITY OF EDINBURGH: A NEW CHAIR.—Lord Woolavington has given £10,000 towards the foundation of a chair of animal breeding at the University. The gift follows on an announcement by the Rockefeller International Education Board of a grant of £30,000 for the extension of the animal breeding department of the University, on condition that a similar sum was obtained in this country (vide THE LANCET, August 14th, p. 341). The director of the department is Dr. F. A. E. Crewe.

TRIBUTE TO THE LATE DR. ADAMI.—The Council and Senate of the University of Liverpool have held special meetings to put on record their profound regret at the death of the Vice-Chancellor, Dr. J. G. Adami, and a special commemoration service, held at the Liverpool Cathedral on Oct. 15th, was attended by a large and representative congregation from the University, City and adjacent towns.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION. This association has issued a syllabus for the winter session containing information about courses of lectures and demonstrations and arrangements for the appointment of clinical assistants. Copies of the syllabus may be had from the Secretary of the Association at the University, Glasgow.

IRISH PUBLIC HOSPITALS AND MEDICAL FEES.—The Irish Minister of Local Government and Public Health has given his decision on the facts brought out in the recent sworn inquiry in County Clare into the practice of charging medical fees to certain patients admitted to the public hospitals (THE LANCET, Sept. 25th, p. 676). The Minister finds that a demand was made for fees in two cases by Dr. T. E. O'Connor, medical officer in charge of the Raheen Hospital. He states that Dr. O'Connor appeared to rely for justification on regulations adopted by the County Board of Health for the admission of paying patients, but he points out that these regulations could not become effective without the Minister's approval, and such approval had not been given. While the Minister "takes a very serious view of Dr. O'Connor's action," he does not propose to take any disciplinary steps. He adds some paragraphs explaining the present position as regards the admission of paying patients to county institutions: "The hospitals provided under the county scheme," he states, "are intended for persons eligible for relief, and the officers of these hospitals are employed and paid by the Board for the purpose of giving their services gratuitously to the persons eligible for relief admitted to those hospitals." Article 42 of the General Regulations provides that "no officer appointed by the Board of Health shall be entitled to demand, receive or accept any fee or payment from any person in receipt of assistance . . . . Power is given to the Board to admit persons who are not eligible for relief to the hospitals, subject to such regulations and conditions as to payment by and accommodation for such persons, or otherwise, as may be approved by the Minister." The medical officers, he says, have not power to regulate the admission of any class of patients to the hospitals, and in the absence of regulations approved by the Minister there is no legal authority under which private patients can be admitted to the hospitals, and the medical officers are not authorised to demand, receive, or accept any fee or payment from any patient treated in the hospitals. It is to be noted, writes our Irish correspondent, that the Minister refrains from any expression of opinion on the propriety of the admission of paying patients, and of allowing the medical officers to charge fees. He deals only with the legal position as it affects County Clare at the present moment. It appears that it is illegal either to admit paying patients or to charge them fees.

Dr. A. D. Macdonald has been appointed lecturer in experimental physiology at the Victoria University of Manchester.

SERVICE HOSPITALS AT PORTSMOUTH.—Arrangements have been made for the reception into the Royal Naval Hospital at Haslar of cases from Army and Air Force units. The Alexandra Hospital, now given up by the Army, has been taken over by the Ministry of Pensions, although an attempt was made to secure it for the use of the city as an adjunct to the Royal Portsmouth Hospital.

GUILD OF ST. LUKE.—The annual service of the Guild was held in Westminster Abbey on Oct. 17th. So large was the congregation that many had to stand throughout the service. Members of the Guild, in academic robes and headed by their banner, formed a procession which preceded that of the choir and cathedral clergy. The lesson was read by the Rev. H. Kirkland-Whittaker, M.B., secretary to the Guild, and the preacher was the Rev. Canon Sopwith, vicar of Maidstone, who took as his text, "The Beloved Physician." Before pronouncing the blessing the Dean of Westminster read the special collect of the Guild.

BIRMINGHAM HOSPITALS: AN IMPORTANT GIFT.—In connexion with the scheme for equipping Birmingham with a hospital centre, Messrs. Cadbury Brothers, Ltd., have offered to give the city about 150 acres of land adjoining the University. It is suggested that the whole of the land shall become the property of the city on the understanding that the council, in consultation with the Hospitals Council for the City of Birmingham, shall select and reserve for hospital purposes about 100 acres of the land and grant long leases to the hospital authorities at nominal rents. It is hoped that the remainder of the land will be used for playing fields. Messrs. Cadbury have offered £5000 as a donation towards the expenses of the city council in acquiring and dealing with the site.

THE Council dinner of the British Medical Association was held at the House of the Association on Wednesday, Oct. 13th, when Sir Robert Bolam presided over a large gathering. The toast list made opportunity for a series of pleasant speeches, most of which were brief, by definite instruction from the chair. Dr. J. A. Macdonald proposed the health of the retiring President, Dr. F. G. Thomson, who refused in his reply to consider what had been termed his "swan-song" as implying cessation of activity in Association matters. Dr. C. O. Hawthorne spoke amusingly to the toast of the "Common Health," which he coupled with the name of the Director-General of the Army Medical Service, Sir Matthew Fell. Dr. Arnold Lyndon proposed the health of "The Guests," when replies were made by Commander Hilton Young, M.P., and Sir Martin Conway, M.P., the former of whom made entertaining allusions to his position as the one lay member of the General Medical Council. The health of the Chairman was proposed by Dr. E. R. Fothergill.

MEDICAL GOLFING SOCIETY.—The autumn meeting was held at Littlestone Golf Club on Oct. 17th and 18th in good weather. C. V. MacKay won the Max Page Prize (singles *v.* bogey) after a tie with Herdman Porter. H. W. Carson and A. E. Mortimer Woolf won the foursomes *v.* bogey with 1 down. The following tied for second place with 2 down: G. Dawson and J. D. O'Keefe; T. P. Kolesar and W. R. Bristow; L. Bromley and H. Chapple; P. Gosse and A. Hope Gosse; H. C. Apperley and E. A. Hardy. The Canny Ryall Cup was won by Harold Chapple with the score of 85−15=70. C. Max Page (80−6) and V. E. Negus (85−11) tied at 74 for second and third places. A. Scott Gillett was fourth with 86−11=75. The best scratch score (74) was done by T. P. Kolesar.

The *Ladies Medical Golfing Society* will hold their autumn meeting at Walton Heath Golf Club on Oct. 26th.

SMALL-POX IN SOUTH SHIELDS.—In regard to the fatal case of small-pox reported last week in South Shields county borough, the medical officer of health, Dr. W. Campbell Lyons, inform us that the patient had been under medical care for about four months and was an "old clothes" dealer. A rash appeared on Sept. 16th, but was not notified to him until the 20th, when the woman was removed to hospital. The case was one of confluent small-pox with large hæmorrhagic bullæ on the back of the hands and the loins. On the parts of the skin which were not covered with small-pox spots, there was a peculiar petechial rash. As the case was from a very unhealthy quarter of the town, a Weil-Felix reaction was done but proved negative 1 in 20. The Wassermann reaction was strongly positive. The patient had a mitral and aortic lesion and atheroma, and developed hypostatic pneumonia two days before she died. Several cases of small-pox had occurred in the neighbourhood, and while the primary source of infection has not yet been established, Dr. Lyons has no doubt that this fatal case had been in contact with one or other of the former cases.

NAVAL MEDICAL COMPASSIONATE FUND.—At a meeting held on Oct. 19th, Surgeon Vice-Admiral Sir Joseph Chambers in the chair, the sum of £114 was distributed among the several applicants.

ROYAL SANITARY INSTITUTE.—The thirty eighth congress of the Institute will take place next year at Hastings from July 11th to 16th. At an exhibition held in connexion with it there will be displayed appliances for housing and general sanitation and other matters relating to health and physical welfare. Information may be had from the secretary of the Institute at 90, Buckingham Palace-road, London, S.W. 1.

COOMBE HOSPITAL CENTENARY CONGRESS.—An international gynæcological and obstetrical congress was held in Dublin recently to commemorate the centenary of the Coombe Lying-in Hospital (vide THE LANCET, Sept. 25th, p. 673). The papers read at the congress are to be published by the *Irish Journal of Medical Science* and may be ordered from the circulation manager of that journal at Parkgate Printing Works, Dublin (price 5*s.* 6*d.*, including postage).

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.—The following awards have been made:—

Senior Scholarship for General Clinical Studies, Todd Prize for Clinical Medicine, Special Prize for Diseases of Children and for Orthopædic Surgery: F. Goldby, M.R.C.S., L.R.C.P., Jelf Medal, awarded annually on the Senior Scholarship Examination to the Candidate who is second in order of merit: A. W. Kendall, M.R.C.S., L.R.C.P. Burney Yeo Scholarship: R. G. Macbeth, B.A., Oriel College, Oxford. Burney Yeo Scholarship (Honorary): T. K. Lyle, B.A., Sidney Sussex College, Cambridge. Burney Yeo Exhibition, F. C. Mayo, B.A., Pembroke College, Cambridge. Burney Yeo Exhibition: C. R. L. Orme, B.A., Sidney Sussex College, Cambridge. Raymond Gooch Scholarship: S. R. C. Price, B.Sc., King's College, London. Tanner Prize for Obstetric Medicine: A. P. Ross. Special Prize for Diseases of Children: J. L. Newman, B.A. Special Prize for Orthopædic Surgery: H. L. C. Wood.

LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION.—The opening meeting of the session was held at the British Medical Association House on Oct. 12th, when the proceedings opened with the induction of the new president, Miss Elizabeth Bolton, into the chair, by Dr. Christine Murrell, the retiring president. After a vote of thanks to Dr. Murrell for her services, the meeting proceeded to business. Reports were presented from the sub-committee on menstruation and from the sub-committee on cancer research, and other business was discussed. Miss Bolton then delivered her presidential address, choosing for her subject Some Aspects of Disease of the Cæcum. She dealt with the subject mainly from the points of view of diagnosis and the results of operative treatment, first discussing carcinoma of the cæcum, with illustrative case records, and then going on to describe a variety of rarer conditions often difficult to differentiate from malignant disease. Among these were actinomycosis of the cæcum, inflammatory masses associated with chronic appendicitis, fibrolipomatous polyp of the bowel complicated by torsion of an ovarian fibroma, and chronic appendicitis associated with ovarian fibroid. These were all illustrated by cases and by a series of slides and museum specimens. The results of operation were uniformly good, she said, in the non-malignant cases. A short discussion followed.

MEDICAL SICKNESS AND LIFE ASSURANCE.—The annual general meeting of the Medical Sickness Annuity and Life Assurance Society, Ltd., was held at the offices of the company, Lincoln House, 300, High Holborn, London, W.C. 1, on Oct. 11th, Dr. F. J. Allan in the chair. In his opening remarks the Chairman said that allowing for incidental variations the figures showed steady increase of membership year by year; the benefits accruing to members under sickness and accident policies were the best obtainable, and the directors had decided to give even greater benefits, to apply to both existing and new policies. Members going on holiday in certain countries for a period not exceeding three months would remain covered without payment of any extra premium, and the directors always took a sympathetic view of cases in which, perhaps, the requirements under the rules had not been strictly complied with. The reason why the amounts paid out had not increased in the same proportion as the membership was chiefly the careful medical examination of proposers. He regretted, he said, that Dr. David Forsyth, who had acted as the medical adviser of the society since 1920, had found it impossible to continue to act for the society, which had therefore secured the services of Dr. A. Hope Gordon in his stead. During the last year the sums insured in life assurance had been for lower amounts; this was attributable to the effect of the general depression caused through the coal strike. Dr. F. J. Allan and Mr. W. H. Dolamore, M.R.C.S., were re-elected directors.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
MONDAY, Oct. 25th.—8 P.M., ODONTOLOGY. Mr. J. B. Parfitt: Presidential Address. Paper: Mr. C. A. Wakeford: Some Observations on the Tooth Band and on the Enamel Organs of the Human Deciduous Teeth.
TUESDAY.—5 P.M., MEDICINE. Clinical meeting at Guy's Hospital. Tea will be served in Mary Ward at 4.45 P.M. Cases and demonstrations.
WEDNESDAY.—5 P.M., COMPARATIVE MEDICINE. Sir D'Arcy Power: Presidential Address.
THURSDAY.—8.30 P.M., UROLOGY. Mr. W. Girling Ball: Some Anatomical Factors in Urinary Affections.
SATURDAY.—STUDY OF DISEASE IN CHILDREN. Provincial meeting (postponed from last session) at the Children's Hospital, Ladywood-road, Birmingham. Train from Paddington (restaurant car) 11.10 A.M. Reduced first-class return fare 23*s.* 1*d.* Those requiring tickets should write to Dr. Neill Hobhouse (18, Harley-street, W.) by midday, Thursday, Oct. 28th.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.
MONDAY, Oct. 25th.—8 P.M., Clinical meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn-fields, W.C.
MONDAY, Oct. 25th.—5 P.M., Mr. C. E. Shattock: Surgical Conditions of Blood-vessels.
FRIDAY.—5 P.M., Sir Arthur Keith: Specimens illustrating Disorders in the Growth of Bone. (Demonstrations open to advanced students and medical practitioners.)

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, Oct. 25th, to SATURDAY, Oct. 30th.—FELLOWSHIP OF MEDICINE (Special Lectures), Medical Society of London, 11, Chandos-street, Cavendish-square, W. Mon., Oct. 25th, Mr. H. J. Paterson: Gastric Hæmorrhage and Perforation of Ulcers. Thurs., Mr. Arthur Cheatle: Emergencies in Aural Disease.—ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, Charing Cross. Fri., 5 P.M., Mr. Gimblett: Special Lecture-Demonstration on Investigation of Visual Fields.—COMBINED COURSE IN DISEASES OF CHILDREN, Paddington Green, Victoria Hospital and Children's Clinic. All-day course.—CHELSEA HOSPITAL FOR WOMEN, Arthur-street, S.W. Post-graduate course in gynæcology. Operations, demonstrations, and lectures.—ST. PETER'S HOSPITAL, Henrietta-street, W.C. Clinical course in genito-urinary diseases, including cystoscopies and formal lectures. The lecture at the Medical Society and the demonstration at the Royal Westminster Ophthalmic Hospital are free to members of the medical profession without fee. Further information from the Secretary of the Fellowship of Medicine.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, Oct. 25th.—10 A.M., Mr. MacDonald: Genito-Urinary Operations. 12 noon, Mr. Simmonds: Fractures and Applied Anatomy. 2 P.M., Dr. Scott Pinchin: Medical Out-patients.
TUESDAY.—12 noon, Dr. Burrell: Demonstrations of Chest Cases. 2 P.M., Mr. Addison: Operations. 2 P.M., Mr. Sinclair: Surgical Out-patients.
WEDNESDAY.—10.30 A.M., Dr. Burnford: Medical Wards. 2.30 P.M., Mr. Donald Armour: Surgical Wards. 2 P.M., Dr. Owen: Medical Out-patients.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Dept. 2 P.M., Mr. Simmonds: Surgical Out-patients. 2 P.M., Mr. Bishop Harman: Eye Dept.
FRIDAY.—10 A.M., Sir Henry Simson: Gynæcological Operations. 10.30 A.M., Dr. Dowling: Skin Dept. 2 P.M., Mr. Vlasto: Throat, Nose and Ear Dept.
SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy Dept. 10 A.M., Dr. Saunders: Medical Diseases of Children.
Operations, Medical and Surgical Out-patients, Special Departments, daily, 10 A.M. to 5 P.M., Saturdays, 10 A.M. to 1 P.M.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY, Oct. 25th.—2 P.M., Medical Cases in the Wards. 2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.
TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.
WEDNESDAY.—2.30 P.M. to 5 P.M., Medical Skin and Eye Clinics. Operations.
THURSDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose, and Throat Clinics. Operations.
FRIDAY.—2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.
On Monday, Oct. 25th, and Friday, Oct. 29th, at 2.30 P.M., there will be special demonstrations of gynæcological cases and medical cases (children) by Mr. Aubrey Goodwin and Dr. Bruce Williamson respectively.

POST-GRADUATE HOSTEL, Imperial Hotel, Russell-sq., W.C.
MONDAY, Oct. 25th.—9 P.M., Discussion: Colour Vision and Colour Blindness, opened by Prof. Roaf.
THURSDAY.—9 P.M., Symposium: The Filled Dead Tooth as a Source of Streptococcal Blood Infection. Open discussion. Dinner 8 P.M. 5*s.*

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Oct. 26th.—5 P.M., Dr. H. W. Barber: Immunity and Anaphylaxis.
THURSDAY.—5 P.M., Dr. W. Griffith: Principles of Treatment. General.

NATIONAL HOSPITAL, Queen-square, Bloomsbury, W.C.
MONDAY, Oct. 25th.—2 P.M., Dr. Hinds Howell: Out-patient Clinic. 3.30 P.M., Dr. Kinnier Wilson: Cerebellar Syndromes.
TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Hinds Howell: Muscular Atrophy.
THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Dr. Riddoch: Some Sequelæ of Encephalitis Lethargica.
FRIDAY.—2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Dr. Collier: Peculiar Maladies of the Fifth and Seventh Cranial Nerves, Neuralgia, Hemiatrophy and Spasm.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street.
THURSDAY, Oct. 28th.—4 P.M., Dr. Frew: Mental Deficiency.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C.
WEDNESDAY, Oct. 27th.—4 P.M., Prof. L. P. Abercrombie: Town and Regional Planning in its Effects upon the Distribution of the Population.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, Oct. 26th.—4.15 P.M., Dr. J. Wharton: Eye Cases.
FRIDAY.—4.15 P.M., Dr. Archibald Donald: Uterine Cancer.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS
FRIDAY, Oct. 29th.—3.30 P.M., at the Royal Infirmary: Prof. Connell: Lesions of the Vertebral Column.

ST. MARGARET'S HOSPITAL FOR WOMEN, Acomb-street, Whitworth Park, Manchester. Post-Graduate Lectures.
WEDNESDAY, Oct. 27th.—4 P.M., R. R. Kerr: The Diagnosis and Treatment of Abdominal Tuberculosis in Young Girls.

ANCOATS HOSPITAL POST-GRADUATE COURSE.
THURSDAY, Oct. 28th.—4.15 P.M., Mr. Harry Platt: Treatment of Common Injuries.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.
TUESDAY, Oct. 26th.—4 P.M., Prof. John Shaw Dunn: Disturbance of Renal Function in Experimental Nephritis. Discussion to be opened by Dr. A. Rowand.

Appointments.

MACDONALD, A. D., M.B., Ch.B. Edin., has been appointed Lecturer in Experimental Physiology in the University of Manchester.

STEELE, RUSSELL V., M.B., B.S. Durh., Medical Officer to School for the Blind, Swiss Cottage, N.W.

SUDLOW, G. W., M.B., B.S. Lond., Certifying Surgeon under the Factory and Workshop Acts for the Hanley District of the County of Stafford.

Manchester Royal Infirmary: Caithness, J. F., M.B., Ch.B. Vict., Shepley, W. H., M.B., Ch.B. Vict., Keddie, J. T. C., M.B., Ch.B. Vict., Whitley, J. T., M.B., Ch.B. Vict., House Physicians; Pendlebury, R., M.B., Ch.B. Vict., Mitchell, D. E. L., M.R.C.S., L.R.C.P., Anderson, J. K., M.B., Ch.B. Vict., Moll, G. S. W., M.B., Ch.B. Vict., Roff, C. D., M.B., Ch.B., House Surgeons; Gerrard, E. A., M.B., Ch.B. Vict., House Surgeon Specials Department; Mumford, P. B., M.D. Vict., re-appointed Assistant to the Dermatologist; Linford, Hilda, M.B., Ch.B. Vict., Clinical Assistant, Surgical; Langford, G. F., M.B., Ch.B. Vict., Resident Clinical Pathologist; Ellis, R., M.B., Ch.B. Vict., Cardiographic Registrar; Morris, L., F.R.C.S. Eng., Surgical Registrar; Whitrow, F., M.B., Ch.B. Vict., Clinical Assistant, Medical; Susman, W., M.D., Junior Pathological Registrar; Drinkwater, S. W., M.B., Ch.B. Vict., Second Surgical Registrar; Gow, J., F.R.C.S. Vict., Assistant Surgical Officer at the Central Branch; Sutherland, D. M., F.R.C.S. Eng., Assistant Surgical Officer; Edwards, M. E., M.B., Ch.B., Vict., Stubbs, J. B., M.B., Ch.B. Vict., Assistant Medical Officer at the Central Branch.

Vacancies.

For further information refer to the advertisement columns.

Bethlem Royal Hospital, Lambeth-road, S.E.—Jun. Asst. P. £350.
Bradford Royal Infirmary.—H.S. £150.
Bury St. Edmunds, West Suffolk General Hospital.—Res. H.S. £180.
Cambridge, Addenbrooke's Hospital.—Electrical and X Ray Dept. Asst. P.
Cancer Hospital, Fulham-road, S.W.—H.S. At rate of £100.
Central London Ophthalmic Hospital, Judd-street, W.C.—Asst. Surg.
Central London Throat, Nose and Ear Hospital, Gray's Inn-road, W.C.—Asst. S. Also Hon. Asst. Anæsthetist.
Chichester, West Sussex County Mental Hospital—Med. Supt. £900.
City of Sheffield.—Jun. Asst. Tub. O. £350.
Coventry and Warwickshire Hospital, Coventry.—Res. H.S. £125.

Freemason's Hospital and Nursing Home, 237, Fulham-road, Chelsea, S.W.—Res. M.O. At rate of £250.
Great Yarmouth General Hospital.—H.S. £150.
Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—Asst. P.
Hospital for Sick Children, Great Ormond-street, W.C.—Bio-Chemist. £600.
Kingston-upon-Hull, Infectious Diseases Hospitals.—R.M.O. £547 9*s.* 5*d.*
Lancashire Education Committee, Edge Hill Training College, Liverpool.—Visiting Med. O. 100 guineas.
Lancaster County Mental Hospital.—Med. Supt. £800.
Leeds, Jewish Herzl Moser Hospital, Leopold-street.—Res. M.O. £50.
Liverpool, Brownlow Hill Infirmary.—Res. Asst. M.O. £200.
London Female Lock Hospital, 283, Harrow-road, W.—Hon. Obstet. S.
London Temperance Hospital, Hampstead-road, N.W.—Hon. P. Also Clin. Asst. in Cas. Dept.
M.A.B. Highwood Hospital for Children, Brentwood, Essex.—Jun. Asst. M.O. for cases of Pulmonary Tuberculosis. Also Jun. Asst. M.O. in Mental Hospital Service. Each £500.
Macclesfield General Infirmary.—Second H.S. £150.
Manchester, Ancoats Hospital.—Anæsthetist. 10*s.* 6*d.* per attendance. Also Pathological Registrar. £100.
Manchester Corporation, Public Health Dept.—Asst. M.O.H. (Maternity and Child Welfare). £850. Also Asst. M.O.H. £750.
Manor House Hospital, Golders Green, N.W.—Asst. S. £750.
Miller General Hospital for South-East London, Greenwich-road, S.E.—Asst. P. and two Asst. S.'s.
Northumberland, Wooley Sanatorium, near Hexham.—Med. Supt. £850.
North Middlesex Hospital, Edmonton, N.—App. to Medical Electricity and Light Department. 3 guineas per session.
Norwich, Norfolk and Norwich Hospital.—H.S. for Ear, Nose and Throat and Ophth. Dept. £120.
Otago University and Dunedin Hospital, New Zealand.—Medical Tutor and Sen. Res. M.O. Also Sen. Res. Surg. O. Each £400.
Penshurst, Kent, Cassel Hospital for Functional Nervous Disorders. Res. M.O. £350.
Royal Free Hospital, Gray's Inn-road, W.C.—Sen. Res. M.O. £150.
Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—Non.-Res. Cas. O. £150. Also H.S. At rate of £100.
St. Mary's Hospital, W.—Phys. for Mental Diseases.
Sheffield, Winter-street Hospital.—Jun. Asst. Tub. O. £350.
West London Hospital, Hammersmith, W.—Phys.
Winchester, Royal Hampshire County Hospital.—Res. M.O. £200.
Woolwich Union Infirmary, Plumstead High-street, S.E.—Second Asst. M.O. £300.

Births, Marriages, and Deaths.

BIRTHS.

MACFIE.—On Oct. 13th, at "Penrhyn," Bayshill-road, Cheltenham, the wife of R. Bute Macfie, F.R.C.S. Edin., of a son.
MURPHY.—On Oct. 14th, at Hernbury House, Linthorpe, Middlesbrough, the wife of Robert Walpole Murphy, O.B.E., M.D., of a daughter.

MARRIAGES.

GRIMMER—SELWYN.—On Oct. 7th, at Holy Trinity Church, St. Nicholas-road, S.W. 17, by the Rev. J. W. Craufurd, Murray, M.A., Vicar of the Parish, George Kerr Grimmer, B.A., M.D., F.R.C.S.E., 282, Balham High-road, S.W. 17, and 11, Wimpole-street, W. 1, to Lilian Florence Nash Selwyn, widow of George Alexander Selwyn, 23, Boundaries Mansions, S.W. 12.
SCHOFIELD—ATKINSON.—On Tuesday, Oct. 12th, at the Parish Church, Morecambe, by the Rev. T. H. Bywater, M.A., vicar of Outwood (uncle of the Bridegroom), assisted by the Rev. T. Mercer, M.A., vicar of St. Anne's, Lancaster, and the Rev. E. A. Seymour Scott, M.A., rector of Morecambe, James Mortimer Schofield, M.R.C.S. Eng., L.R.C.P. Lond., elder son of the late C. D. Schofield, of Bradford, and of Mrs. Armitage, Minden Bray, Epsom Downs, Surrey, to Marjorie, elder daughter of T. Atkinson, Esq., J.P., and Mrs. Atkinson, of Berwyn, Morecambe. At Home Nov. 2nd, Gairloch, Bare, Morecambe.

DEATHS.

ALLAN.—On Sept. 8th, at The Peak, Hong-Kong, James Cyril Dalmahoy Allan, M.D., in his 45th year.
GABELL.—On Oct. 14th, at his residence, South Croxted-road, Dulwich, Douglas Phillimore Gabell, M.R.C.S., L.R.C.P., L.D.S. R.C.S.E.
GIBBONS.—On Oct. 15th, suddenly, in his surgery, at Malden-crescent, N.W., while attending a patient, Charles James Preston Telford Gibbons, M.R.C.S., L.R.C.P.
LAPAGE.—On Oct. 14th, at Dolywern, Charles Clement Lapage, M.A., M.D. Cantab., M.R.C.S., L.S.A. (retd.), aged 75 years. Late of Nantwich, Cheshire.
PARRY.—On Oct. 12th, at Ty Newydd, Carnarvon, North Wales, Dr. Robert Parry, J.P., aged 71 years.
PARSON.—On Oct. 11th, at Bondfield, Bursledon, Hampshire, Henry Parson, M.R.C.S., L.R.C.P., aged 75 years.
REDMOND.—On Oct. 13th, at Scorton, Yorkshire, Charles Stennett Redmond, M.D., aged 83 years.

N.B—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

PUBLIC HEALTH IN GERMANY.

ON Monday, Oct. 18th, Prof. Rudolf Abel, of the University of Jena, gave, at the Royal Society of Medicine, the first of two Chadwick lectures on the Development and Present State of Public Health in Germany. The main object of the lectures is to compare English and German conditions and explain the reasons for their difference.

After describing the bad state of affairs at one time prevailing in Germany, Prof. Abel referred to the progress in hygiene noticeable during the eighteenth century—progress which ceased, however, owing to the poverty caused in Germany by the wars of Napoleon. This poverty did not allow of many improvements being made, a notable exception being a campaign against small-pox, following the investigations of Jenner into vaccination. About 1840 England undoubtedly took the lead in hygienic legislation and practical sanitation, since her industrial development obliged her to pay attention to these matters. In this respect she was for a long time the instructor of Germany, whose special contributions to knowledge were rather those of Pettenkofer in scientific hygiene and Robert Koch in bacteriology. It was only after the foundation of the German Empire, in 1871, that practical measures of public health underwent much development. The conversion of Germany from a generally agricultural country into an industrial one, and the enlargement of towns which this involved, was carried out without any damage thanks to improvements in hygiene; and, in fact, sanitary conditions steadily improved.

To the late war Prof. Abel attributed very serious impairment of the public health due to the blockade. Nearly 800,000 persons perished in Germany from want of food and from diseases consequent on it, and the development of children suffered greatly. Since its end, however, all possible measures have been taken, in spite of economic distress, to improve the standard of public health again; these measures are having good results.

Referring to health legislation and administration, Prof. Abel pointed out that the establishment of institutions for public health rests in Germany, as a matter of course, on the local authorities, who do not need any special authorisation by a Public Health Act as they do in England. Medical officers of health are all State officials and receive their salaries from the Government, but the cost of institutions and works is borne by the local authorities, and only exceptionally by the State, whose expenditure for sanitary purposes is, therefore, small.

In conclusion, Prof. Abel showed comparative diagrams and tables of the mortality- and birth-rates in England and Germany. During the past 50 years mortality has been falling more in Germany than in England, so that the two countries are now nearly on a level; but the birth-rate is decreasing in Germany more than in England. This latter fact is causing anxiety in Germany, and efforts are being made to raise the birth-rate, to reduce infant mortality, and to improve the health of children.

Prof. Abel expressed his satisfaction that interest should be shown in England in German hygiene; in Germany, he said, English public health work is carefully studied.

SUDDEN WHITENING OF THE HAIR.

THE *Bruxelles Médical* has been holding an inquiry into this intriguing riddle of the whitened hair, and in a recent issue it reprints from the *Revue Pratique de Biologie Appliquée* a survey by Mr. Carrion, the well-known biologist, of the literature on the subject. He has had no trouble in finding instances among the ancients, for they were full of the phenomenon, and the chief difficulty of the annotator was to choose. His first example is a delightful one from Aventinus in the Annals of the Boii. The Emperor Louis was away at the wars, and his wife sent him a letter with a black seal. To the same messenger she entrusted a letter to her lover with a red seal, but the man mixed up the two letters. The enraged Emperor left his armies and returned home at top speed, where he executed his wife, stabbed her girl accomplice, and threw the keeper of the women's quarters from the ramparts. In a paroxysm of remorse for this triple slaughter he saw a vision so horrible that his hair turned white. As a form of penance he built and endowed a monastery, but Aventinus omitted, as Mr. Carrion remarks, to relate whether this treatment succeeded in restoring his hair to its normal colour. The story is typical of all the other traditional examples, which give as the cause of the hair turning white imprisonment, a death sentence, or the slipping of the rope from which a birds-nester hung on a cliff face. The phenomenon has always had a powerful appeal to superstitious minds, and it is recorded that a pope, who had refused a bishopric to a candidate, changed his mind when the man appeared next morning with white hair.

Schenkins tells of a peasant whose beard grew white upon certain birth marks which were due to a fright his mother had sustained during pregnancy. More recent is the note in Charcot's "General Anatomy" of a passage in Alibert describing the effect on a man of three pieces of bad news which he had received at different times in his life; the first turned half his beard white, the second turned the hair on the same side of his head, and the third whitened a tuft of hair that grew on his shoulder. Sollier reported to the Society of Military Medicine and Surgery of Montpelier in 1916 the case of a soldier who had been buried for half an hour in a mine explosion and who was treated for a severe burn on his face. When the dressing was removed three days later the growing hair was quite white; the patient also suffered from epistaxis, headache, generalised spasm, and mental confusion. These symptoms and the whiteness both disappeared by degrees. The soldier admitted that he had been extremely frightened at the time. Mr. Bernard, who conducted our contemporary's inquiry, produced among three examples one of a woman spy of 32 who was sentenced to be shot. When she was led out at dawn of the following day her chestnut hair had turned white. Captain Prother, of the *Carpathia*, who went to the aid of the stricken *Titanic*, tells that most of the corpses taken from the water, even the children, had white hair. The explanations suggested by modern authorities are disappointing. That of Landois and Pfaff in the last century, that the skin had secreted, under the influence of emotion, a bleaching substance akin to chlorine, and that of Mr. Bertrand, that movement in the sympathetic part of the cortex set up an aberrant reflex action which might inhibit the supply of pigment, do not speak well for the neurological science of that time. Mr. Fafner, expounding in the *Libre Belgique* his hypothesis of a neuropsychological inhibition of thyroid secretion, does at any rate indicate a line of possible inquiry, but no one has improved on Lemnius, who said that the same mechanism that drove the blood from the skin drove inwards also the fluid with which the skin nourished the roots of the hair. If the phenomenon of sudden blanching does exist—and the circumstantial evidence for its existence is strong—the answer will presumably come as a by-product of new investigation into the working of the sympathetic nervous system. Meanwhile, the riddle remains unanswered. Incidentally, if Mr. Carrion is always as entertaining as he is in this summary, it must be a joy to learn biology from him.

A STUDENTS' GUIDE.

"Technical Education," by Mr. J. C. Ghosh, B.Sc., F.C.S. (Thacker, Spink and Co., Calcutta and Simla, 1926, pp. 316, Rs.4.8), is a guide to careers for young Indians in the public services, commerce, and industry. Since the author is the principal of the Calcutta School of Technology the larger part of the book is devoted to this subject and its possibilities. These lead him to a discussion of the public health problems of his country, and the scope for research and routine work in such subjects as the value and standardisation of indigenous drugs, scientific agriculture, preventive medicine, chemical analysis, and the provision of pure bread. The appendices form a students' guide to the educational facilities and government services of the country, including the Indian Medical Service.

NATIONAL COUNCIL FOR THE UNMARRIED MOTHER AND HER CHILD.

THE work of the National Council for the Unmarried Mother and her Child, which has just issued its eighth annual report, is becoming more stable and more widely recognised as the years go by. Not long ago a sum of £500, left by the late Mr. Hector Sassoon for the benefit of unmarried mothers and their children, was allocated by the executors to the Council as the most suitable national organisation to deal with it. This fund made it possible to pay for the third year a retaining fee for a bed and cot in a Church Army hostel, to make grants towards maintenance in a home or hostel, and to send a number of tired mothers with their babies to the seaside for a short holiday. The Council is specially interested in legal reforms affecting children born out of wedlock, and it was a disappointment that the Legitimacy Bill again failed for lack of time in the House of Commons. The help of a good friend was lost on Captain G. E. W. Bowyer's appointment as Government Whip, in which position he is unable to take any active part in the Council's parliamentary work. Captain A. V. Cazalet has now undertaken to watch its interests in the House of Commons. Evidence was given by the hon. solicitor, Mr. Warden Gowing, before the Poor Persons' Legal Aid Committee, to press the need for legal aid to unmarried mothers in affiliation cases, and information was collected in connexion with health insurance and the payment of maternity and sickness benefit to unmarried mothers. The case committee registered 765 new cases during the year ended May 31st, 1926, this being 128 more than in the previous twelvemonth. An inquiry into the expenditure in residential homes was carried out by the consultative committee on homes and hostels. The Council has made efforts to forge links with similar organisations in other countries; it was represented at the first international congress on child welfare, held in Geneva, and on a special committee of the British Auxiliary Societies of the International Woman Suffrage Alliance, meetings of which were held in Paris. One of the sessions of the fourth English-speaking Conference was arranged by the Council, when the subject chosen for discussion was "The Churches and the Child"; two conferences were held at Carnegie House, on "Infant Mortality of Illegitimate Children, and Some Methods of Coöperation by which it might be further reduced," and "Coöperation between District Nursing Associations and Rescue Organisations in dealing with Unmarried Mothers." The general secretary of the Council is Miss Susan Musson, at 117, Piccadilly, London, W. 1.

MEDICAL ADDRESSES.

Mr. Alfred Rose, of the Addressing Company, Ltd., 56, Chancery-lane, W.C. 2, has been to the trouble of preparing a complete set of medical stencils and of keeping them scrupulously up to date by reference to examination lists, obituary notices, calendars, and so forth. The result is that the company is ready at any time to provide a set of envelopes addressed to all the medical men and women on the Medical Register, or to some selected group of these, such as practitioners in Scotland, or Canada, medical women, or Fellows of one or other Royal College. The point is made that every medical man and woman has been addressed in strict accordance with professional etiquette and with the chief degrees or qualifications, continually corrected as necessary. The list contains upwards of 50,000 names, carrying the practitioner's date of registration which can be printed with the address or deleted as required. Card indexes can also be prepared from the same stencils, and so sure is the compiler of the accuracy of the list that he offers to refund postage on every envelope sent with his stencil to any address in the United Kingdom and returned as undeliverable. The charge for straight addressing from the stencils is 12*s.* 6*d.* per thousand, quotation being offered for special lists or selection.

SPECTROSCOPY OF X RAYS AND ULTRA-VIOLET RADIATION.

WE have received from Messrs. Adam Hilger, Ltd., two brochures dealing with spectrometers and spectroscopes. One contains the description of three X ray spectrometers, which are arranged not only for determinations of X ray wave-lengths, but also of the space lattice structure of crystals and powders. These will be of considerable interest to those engaged in radiological work. The other gives a description of a simple ultra-violet spectroscope, which has been designed particularly for investigation of the constitution of the radiations from the ultra-violet lamps used in the practice of light therapy, but forms also a useful instrument for physical and other laboratories. It has quartz lenses and prism, with a fluorescent screen on which the ultra-violet spectrum can be seen. Above this screen is a boldly engraved wave-length scale which serves to denote the position which the radiations occupy in the spectrum. The whole instrument is in constant adjustment, and requires no further manipulation than to direct its slit at the light source. A suitable cloth is provided, with which the back of the instrument and the observer's head may be covered, to facilitate observation by excluding stray light from the fluorescent screen. On covering the head with the cloth provided it is seen that, besides the visible spectrum on the narrow whitened strip at the right-hand end of the fluorescent screen, there are a number of bands of a green hue appearing to the left of this. These correspond to the ultra-violet radiations from the lamp; their position in the spectrum can be determined by reference to the small scale just above them. In this scale the enumeration is in hundreds of Angstrom units. Thus 23 corresponds to 2300 A. Possessing data for the relative values of various radiations in terms of therapeutic effect, it is thus possible to obtain a rapid and accurate estimate of the value of the light source for treatment work. The usefulness of this instrument in testing the absorption of protective windows and goggles, and in observing the ranges of transmission of filters and arc protectors will be readily seen. The necessity of checking the protective value of goggles has been emphasised in a paper by B. D. H. Watters in THE LANCET (1925, ii., 495).

Messrs. Allen and Hanburys announce that for the convenience of prescribers the morphine content of Liquor Opii Sedativus (Battley) has been increased from 1·5 to 1·8 per cent. so that each fluid drachm now contains 1 gr. morphine. The dose is thus reduced from 5–15 ℥. to 5–10 ℥.

COLONIAL HEALTH REPORTS.

BARBADOS.

BARBADOS, the most easterly of the West Indian islands, is a little more than half the size of Anglesey. In a report by Mr. J. B. Howell, Acting Colonial Secretary for the year 1924–25, it is stated that the population of the colony on Dec. 31st, 1924, was estimated to be 159,499, but as this estimate depends on emigration and immigration figures, which experience has shown to be often seriously inaccurate, not much reliance can be placed upon it. According to the census of 1921 the black population numbered 111,677; the number of whites being 10,429, and of mixed 34,216. The birth-rate during 1924 was 32·91 per 1000, and the death-rate 29·54. The percentage of illegitimate births was 68·24. Up to the end of 1924 no registration of the causes of death was available, but from Jan. 1st, 1925, a Registration of Deaths Act came into force, and in the future it will be possible to give information as to the principal causes of death. The number of infant deaths per 1000 births in 1924 was 298, as compared with 220 in 1920, 401 in 1921, 187 in 1922, and 371 in 1923. Barbados enjoys natural and climatic advantages from a health standpoint such as can scarcely be found in any other tropical place. Malaria is unknown, there are no extremes of heat or cold, the soil is well drained, and the water-supply very good; it is, moreover, constantly swept by the trade winds. In these circumstances it is an unusually healthy place of residence for all who are able to secure themselves freedom from insanitary surroundings. Enteric fever and dysentery are, however, unfortunately common. The number of cases of enteric notified during the last five years has been: 1920, 1012; 1921, 3070; 1922, 1084; 1923, 735; 1924, 762. The ordinary type of enteric fever cases is of a mild character. Proposals for a comprehensive review of the system of public health organisation have been placed before the Legislature by the Government at the suggestion of the Secretary of State. The question is one which is full of more than usual difficulty owing to the density of population and existence of vested rights, but the high and fluctuating death-rate, combined with undue prevalence of enteric fever, indicates unmistakably that improved sanitary methods are an urgent need. Apart from the conditions referred to the island is exceptionally healthy and remarkably free from epidemic disease. A venereal disease clinic, established at the General Hospital in 1922, has been attended by steadily increasing numbers. Subsidiary clinics in other parts of the island are much needed. The treatment of inmates of the Leper Asylum with ethyl esters of chaulmoogra oil has been continued with very hopeful results in a number of less advanced cases. Four cases were discharged as cured during the year, and there are at the present time several cases waiting the holding of medical boards to decide whether they can be discharged. All cases that are discharged are required to show themselves to the medical officer of the asylum every three months with a view to his ascertaining whether there has been any return of the trouble. In June, 1924, a riot occurred in the Leper Asylum, when some of the inmates assaulted and beat the superintendent, who had been recently appointed to improve the discipline of the institution. The police had to intervene and the ringleaders were convicted and removed to the Government gaol where they were specially segregated. The majority of the inmates sympathised with the superintendent, and on his return to duty with changes in his staff he has had no trouble in enforcing discipline, and the institution is now in a quiet and satisfactory condition.

BASUTOLAND.

This native territory in South Africa has an area of 11,716 square miles; the altitude varies from 5000 ft. to 11,000 ft. above sea-level, and the climate is, on the whole, healthy. The census of 1921 showed a population of 495,937 natives, 1603 whites, 1069 coloured, and 172 Asiatics. Mr. R. B. Smith, Government Secretary, in his report for 1925, states that during the year 59,295 patients were treated at the Government dispensaries, in addition to 2221 in-patients in the hospitals of Maseru, Leribe, Mafeteng, Mohale's Hock, and Quthing. 2148 operations were performed in 1925. It is hoped to have the new hospital at Qacha's Nek in full working order this year.

The general health of the territory has been very good. Typhus fever, which has been endemic since 1917, has almost disappeared, only 51 cases with four deaths being reported in 1925, as compared with 556 cases and 41 deaths in 1924, and 958 cases with 120 deaths in 1923. This gratifying result in due to the natives appreciating the cause of the disease and taking necessary precautions. The epidemic of small-pox in the centre of the country, which was reported last year, was got well in hand. 26,632 persons were vaccinated. Influenza and dysentery were responsible for 589 and 130 cases respectively, and were of mild type. The free treatment of syphilis has been continued and the number availing themselves of the privilege is increasing every year. Certain European missionaries who live in remote parts of the territory have been given a supply of the remedies for distribution in these areas and with excellent results. The sanitary condition of the various Government reserves has been very much improved by the provision of latrines, &c., for the use of the native inhabitants. Outside the reserves it is not possible to do much as yet except in the way of instruction in simple hygiene when opportunity offers at the dispensaries. On Dec. 31st the numbers of inmates at the Leper Settlement were—males 228, females 233, total 461. Except for minor fluctuations throughout the year the population was stationary. The cases of desertion were considerably more numerous in 1925 than in previous years, and, paradoxical as it may seem, the increase was due to greater prosperity. Most of the desertions occurred immediately after the inmates had been paid for their exceptionally large crop of maize, and it is presumed the less provident went out to spend the money. It is satisfactory to note that of those previously discharged as cases of arrest of the disease only two—one male and one female—had to be readmitted as recurrences, and one female had to be readmitted on account of the lack of proper care outside. The general health of the institution has been good and there was particular freedom from epidemic disease.

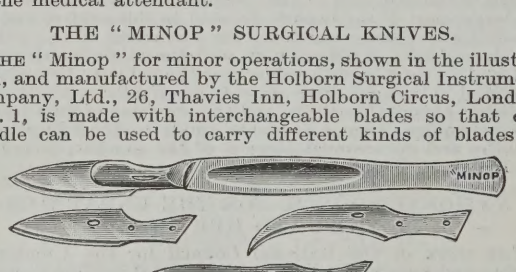
The intensive treatment for leprosy still continues to be rigorously pushed with more or less gratifying results. Dr. Eric Slack, the medical officer of the settlement, went to India towards the end of the year for the purpose of studying the disease there and at the Calcutta centre for leprosy research. Much is hoped from his visit in the way of improved treatment. The farm in connexion with the settlement produced excellent crops of maize, oat forage, hay, ensilage, &c., and the dairy provided 13,680 gallons of milk. Carrots and Swedish turnips were sown for the use of the lepers, who ate them raw for their vitamin content. These raw vegetables had an excellent antiscorbutic effect and rendered the purchase of oranges unnecessary.

ZORBO JOINT JACKETS.

WE have received from Messrs. Robert Bailey and Son, Ltd., Marriott-street Mills, Stockport, samples of "Zorbo" joint jackets which are designed for use in the treatment of sciatica and kindred ailments. They are made of a layer of cotton-wool sandwiched between gauze, and are shaped to fit the chest and back, the shoulder, elbow, wrist, knee, and groin. These dressings are kept in position by means of tapes and buckles and they readily absorb and retain any kind of liniment prescribed by the physician. They promise to be a comfort to the patient and a convenience to the medical attendant.

THE "MINOP" SURGICAL KNIVES.

THE "Minop" for minor operations, shown in the illustration, and manufactured by the Holborn Surgical Instrument Company, Ltd., 26, Thavies Inn, Holborn Circus, London, E.C. 1, is made with interchangeable blades so that one handle can be used to carry different kinds of blades as



may be required. Each blade is pierced with three holes, two of which engage corresponding pins in the handle, while the third hole receives the stud of a lever clamp which securely holds the blade in position. A new blade can be fixed to a handle in a few seconds, and one great advantage of the arrangement is that a sharp knife can always be available. The blades are made of cold rolled Sheffield steel and these are hardened, polished, ground, and set by hand. Metal or leatherette pouches to carry one handle and six blades can be supplied by the company as well as tubular carriers with rack for carrying the handle and blades sterilised in alcohol.

PINE OIL PREPARATIONS.

Messrs. Roberts and Co., wholesale pharmacists, 76, New Bond-street, have sent us specimens of two preparations of pine oil, "Pinolac" and "Pine Needle Spirit." Pinolac is a toilet article intended for use in the bath, the pine oil employed in its preparation being *Oleum pini pumilionis*. Four tablespoonfuls should be added to an ordinary bath of hot water, one tablespoonful to a hip bath, or a teaspoonful to a child's bath. Pine needle spirit is a solution of the same oil in spirit and is intended for vaporising or spraying either in the sick room or the ordinary dwelling-room. Both preparations are pleasant in use.

An Address

ON THE MODERN TREND OF PROPHYLACTIC AND THERAPEUTIC IMMUNISATION AND ITS INTERPRETATION.

Being the Presidential Address delivered to the Section of Pathology of the Royal Society of Medicine on Oct. 19th, 1926,

BY JAMES McINTOSH, M.D. ABERD.,

PROFESSOR OF PATHOLOGY, UNIVERSITY OF LONDON, AND DIRECTOR OF THE BLAND-SUTTON INSTITUTE OF PATHOLOGY, MIDDLESEX HOSPITAL.

ACTIVE immunisation is now recognised as a very definite therapeutic and prophylactic practice in human medicine. Prophylactic vaccination, especially, and particularly in respect to several common infective diseases, has been most thoroughly vindicated by the results achieved. Largely by its means small-pox has become rare, and in well-vaccinated countries has practically disappeared. One of the most striking features in the Medical History of the Great War is the almost complete absence of typhoid fever as compared with the high incidence in former wars.[1] We are not, however, on such sure ground when dealing with therapeutic vaccination, for although in certain conditions very striking results have been obtained, yet in many infections failure must be recorded.

I propose first to make a short review of the literature of the subject in order that the main steps by which the process has advanced may be appreciated

PROPHYLACTIC IMMUNISATION.

It was known even in ancient times that a previous attack of an infective disease may render the individual resistant or immune to a second attack; this was the reason for the wilful exposure of children to infection and even to the actual inoculation of infective material. It is to Jenner, however, that the actual discovery of prophylactic immunisation is usually accredited. The earlier workers on this subject all sought to obtain a modified and less virulent virus. Thus in variolisation the introduction of variolous material under the skin seemed to reduce the virulence of the virus and to produce a less severe attack of the disease. Jenner, being familiar with the old Gloucestershire belief that an attack of cow-pox rendered man immune to small-pox, proved in his brilliant experiments the truth of this idea,[2] as a result of which experiments vaccination against small-pox gradually became general over the whole civilised world. It is now known that the virus of small-pox can be attenuated by passage through animals, but whether Jenner used a true cow-pox or only a modified small-pox will never be known, nor does it matter greatly. At the present time it is probable that most strains of calf lymph are variolous in origin and as such are attenuated viruses.

Pasteur and his collaborators expanded the idea of Jenner and applied it to other infections, both human and animal.

For many years it was firmly believed that the use of a living but attenuated virus was essential to the production of a good prophylactic immunity, which of course greatly restricted its application to human medicine. Gradually, however, this belief has broken down; in the 'nineties Haffkine [3] with his plague vaccine, and Wright [4] with his typhoid vaccine, broke completely away from this idea and used dead instead of living virus. Previous to Wright's work on typhoid fever attempts to induce immunity by inoculations of dead bacteria had been merely tentative and incomplete. It is chiefly to Wright, therefore, that we owe the knowledge that killed cultures provide an efficient means of producing immunity.

The success of prophylactic vaccination against typhoid fever has already been noticed, but it is equally successful against many other infections, including dysentery, cholera, plague, and pneumonia. During the past few years we have seen attempts to simplify the prophylactic injection still further by employing, where possible, simple bacterial products, toxoids, and even aggressins, as in the prophylactic inoculation against diphtheria,[5] scarlet fever,[6] and other infections. The toxin may be modified by the addition of antitoxin or chemical substances. Thus we see that the general trend of medical progress has been to drop the use of a living virus for the dead virus or for some of its products. In immunisation against rabies, virus killed by heat, carbolic acid, ether, &c., have in many institutes replaced the original dried cord method of Pasteur.[7] There is now only one human disease—i.e., small-pox—in which the injection of the living virus is still widely used to procure an immunity. Apparently the Jennerian method is still employed for want of a more reliable one, or is it that the prophylaxis of this particular disease has been so bound down to a fixed procedure that stagnation has followed? Scientifically, it cannot be disputed that from every point of view the injection of virus capable of multiplying in the body of the individual is bad. When multiplication of the virus occurs, then there is no possibility of estimating the dose to which the patient has been subjected. Thus the effect cannot be controlled, and in susceptible individuals this may lead to unforeseen results. It can, of course, be argued on statistical grounds that the likelihood of bad effects after small-pox vaccination is infinitesimal and not worth consideration; but is this really so? It has recently been shown that nervous disabilities (meningo-encephalomyelitis, &c.) may follow vaccination, either as a direct effect or as a sequel to the lowering of the general resistance of the body.[8] From time to time there have been attempts to reintroduce the use of an attenuated living virus as a prophylactic measure in certain other human diseases; particularly is this true in regard to tuberculosis.[9] This I am sure is an innovation which should be rigorously opposed and regarded as a retrograde step; who knows for how long an attenuated bacillus can lie dormant, and then assume its former virulence?

THERAPEUTIC IMMUNISATION.

For the introduction of bacterial immunisation as a curative measure we are indebted to Wright [10] and his collaborators. This form of vaccine therapy is, however, really a development of prophylactic immunisation, but I think that most of you will agree that it has not proved so successful. Once it was hoped that vaccine treatment controlled by opsonin estimations would give therapeutic success rivalling the results of prophylactic immunisation. This hope has been disappointed.

At the outset the originators of this form of therapy insisted on the specificity of the reaction and emphasised the use of specific vaccines. At the present moment there is a tendency for the pendulum to swing the other way, and it is said that there is nothing in this vaunted specificity. Let us analyse this contention under the heading of Non-specific Therapy.

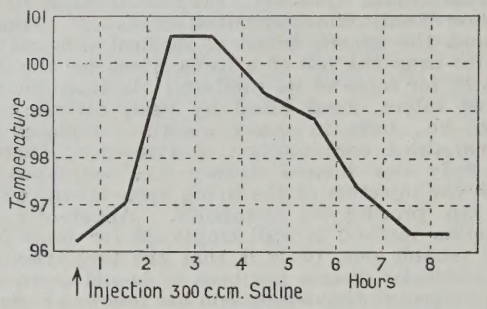
Non-specific Bacterial Therapy.

As I have just pointed out, Wright's original vaccine therapy is based on the principles of strict specificity. But it was frequently observed that rapid improvement followed almost immediately on the injection of a single dose of vaccine, a fact which could not be explained on any of the known phenomena of immunity. This was first noted as long ago as 1893 when Fränkel treated cases of typhoid fever with typhoid vaccine,[11] and Rumpf with *B. pyocyaneous* vaccine.[12]

It is now recognised that other substances, particularly of a proteid nature or origin, can bring about similar phenomena. It would appear that a stimulus is liable to follow on the injection of any substance

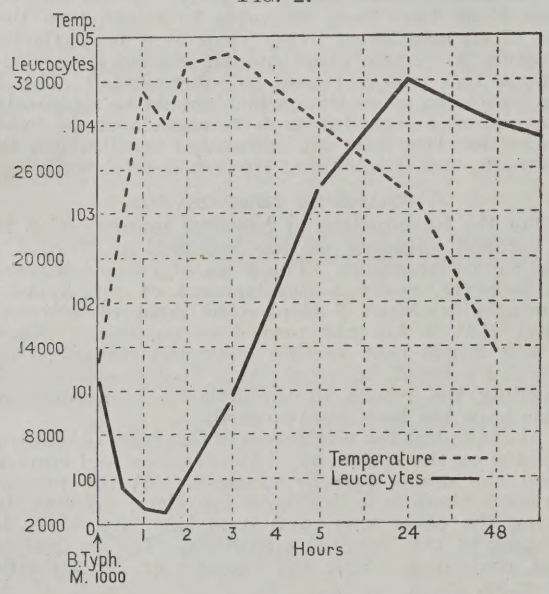
which might be regarded as a foreign proteid. My own attention was first drawn to this reaction when investigating with Dr. P. Fildes the causation of saline fever in relation to salvarsan therapy. In 1912 Dr. Fildes and I noted that the rapid healing of leg ulcers, chronic eczema, &c., frequently took place after an injection of what we then believed to

FIG. 1.



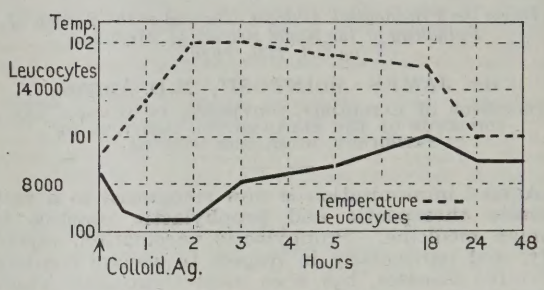
be normal saline.[13] Subsequent investigation demonstrated that saline prepared from ordinary distilled water contained large numbers of dead bacteria—bacteria which are able to grow in distilled water. The injection of such saline intravenously gave rise to considerable reaction on the part of the patient, which we may now regard as protein shock. Generally within half an hour of the injection the patient manifested a rigor followed by a rise of temperature of from 2–3° C., with headache, nausea, or vomiting, and a rapid pulse. The temperature reached its maximum in about three hours' time and then,

FIG. 2.



accompanied by sweating, it slowly fell to normal. In about eight hours' time the patient's condition was again normal, and as already mentioned, the healing of various skin lesions was greatly stimulated. At the present time a considerable amount of success has followed the application of non-specific proteid therapy in such disorders as chronic ulcers, chronic eczema, and rheumatoid arthritis. This line of treatment must also be regarded as a direct development of specific vaccine therapy. The dosage must be sufficiently high to produce a well-marked tissue response, which is apparently preceded by a temporary depression of the defensive mechanism of the body. That large doses of vaccine have this latter effect was well known to Wright, who noted the depression of the opsonic index—termed by him the negative phase. It was undoubtedly the fear of producing this negative phase that prevented the use of larger doses of vaccine, and who is bold enough to say that a more heroic dosage might not have given a better therapeutic result—at any rate in the subacute or chronic infections? We know that

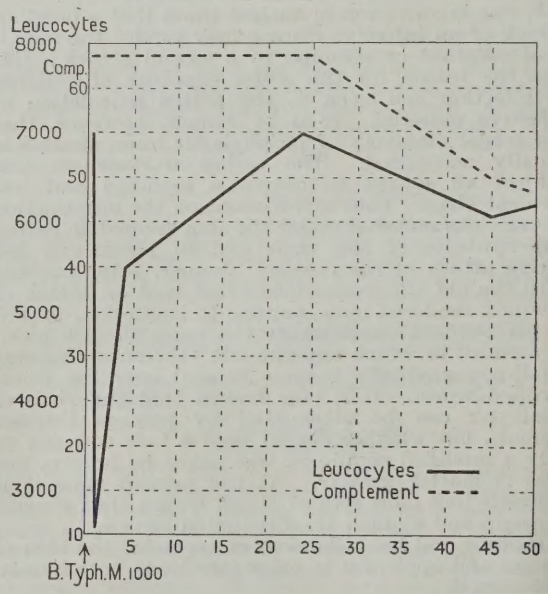
FIG. 3.



although the smaller dose may produce immune bodies it does not always cure the patient. The application of large doses of vaccine to those conditions, such as tuberculosis, where there is a hypersensitiveness to the antigen, is inadmissible on account of the intense reaction which is liable to follow.

When used in larger dosages, specific vaccines produce the typical protein shock of non-specific therapy. The general consensus of opinion seems to be that non-specific or protein shock therapy has come to stay, since in many subacute and chronic

FIG. 4.



infections it has given striking therapeutic results. The effect, as already indicated, is mainly due to the stimulating effects of a foreign proteid or proteid derivative, and the curative effects of such remedies as normal horse serum, Coley's fluid in sarcomata, or a concurrent infection, are all attributable to the same phenomenon; may it not be that some of the effects of colloidal lead in malignant disease are of much the same nature? At the present moment it would appear that the success attained by non-specific therapy has reacted against the use of specific vaccines, and there has followed in some quarters a tendency to minimise the old belief in the value of specificity. But from a scientific point of view this is quite erroneous, as the specific vaccine can cause

both the specific and non-specific reactions, so that by its use a double effect is produced.

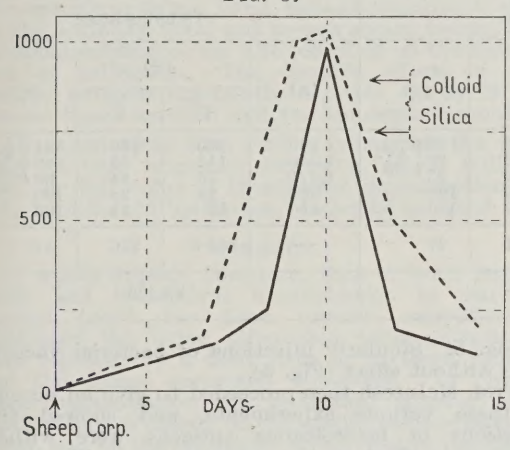
THE MECHANISM OF BACTERIAL IMMUNISATION.

This now brings us to the second part of my address—namely, the nature of these specific and non-specific reactions with which I have just dealt.

Specific Immunisation.

With regard to specific immunisation, immunologists now recognise that resistance to infection following the use of vaccines depends mainly on two factors: (1) The production of specific antibodies. (2) The sensitisation (allergie) of the tissues to the virus. For instance, after antityphoid vaccination antibodies can be demonstrated in the serum for

FIG. 5.



several years afterwards, and even after these can no longer be demonstrated the tissues are still sensitised, as shown by the rapidity with which antibodies can be produced after an injection of antityphoid vaccine.

Dr. L. E. H. Whitby, working in my laboratory, found that antibodies (agglutinins) were readily demonstrated several years after a prophylactic antityphoid inoculation.

Non-specific Therapy.

In spite of a considerable amount of research work into the phenomena of non-specific vaccine therapy, the answers obtained have been rather indecisive. In an indefinite sort of way the effect is accredited to leucocytic action, to an increased flow of blood and lymph, to antiferments, antibodies, phagocytosis, &c. One very definite fact, however, is established—namely, that in most instances the injection is followed by a leucocytosis. As a series of observations on antibody production, which I made quite recently in conjunction with Mr. A. N. Kingsbury, and a later unpublished series made with Dr. Whitby, have some bearing on the explanation of this reaction, I propose to give some account of them here. The phenomena observed may be readily grouped under three headings: (1) General tissue reaction. (2) Leucocyte response. (3) Immunity or antibody response.

The *general tissue response* is apparently dependent on the pyrogenetic properties of the foreign (bacterial, &c.) proteid, as we found was the case in saline fever. This reaction, I think, must be regarded as a process identical with that which occurs in the fever which accompanies a natural infection. Fever, of course, is now regarded as part of a protective process and not to be suppressed, as was the practice at one time. During a fever response the general metabolism is increased, circulation quickened, and the flow of lymph is increased. In this way there is an increased flow of all the protective substances through the tissues of the body, together with an increased rate of removal of waste and such like substances. The effect in its broadest sense is therefore comparable to the old-fashioned poultice or to a fomentation. Such a reaction alone is bound to stimulate the healing of various lesions.

Fig. 1 shows the temperature curve of saline fever produced by the injection (intravenous) of 300 c.cm. of saline—not made from freshly distilled water.

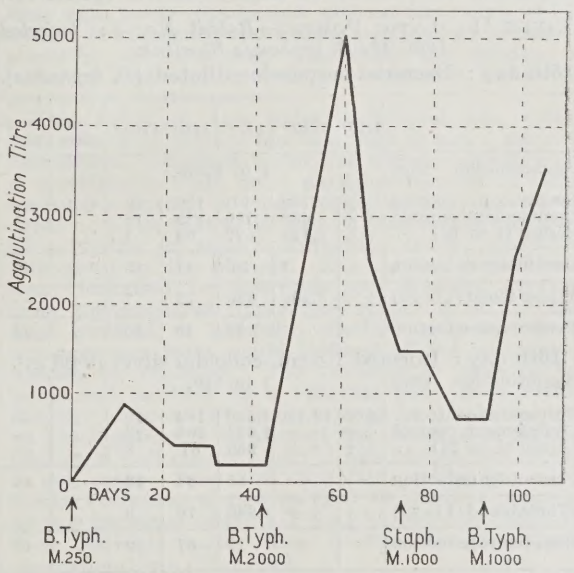
The *leucocyte response* is very definite. It consists, first of all, of a diminution (leucopenia) within an hour of the injection, which is immediately followed by an increase, till within 24 hours there is a well-marked leucocytosis (polynuclears). The effects of a protein shock as obtained in non-specific therapy produced by the intravenous injection of a 1000 million *B. typhosus* vaccine into a rabbit is shown in Fig. 2.

It has been stated that this non-specific effect is mainly the result of the interaction of one type of colloid with another, and it has been claimed that colloidal metals have a similar effect. In our hands the response to the injection of colloidal metals has always been much less than that produced by an organic colloid. Fig. 3 shows the effects of an injection of 0·05 grm. of colloidal silver intravenously injected into a rabbit. Perhaps much of this stimulation is due to the organic colloid used to protect the inorganic colloid. In the case of the guinea-pig the injection of colloidal silver seems at times to have rather a depressing effect, as at the end of seven days the leucocytes had fallen to about one-third of their number, no doubt as the result of the toxic action of colloidal silver.

Antibody Response.

Under this heading the effect on both the natural and immune antibodies has been considered.

FIG. 6.



(*a*) *Natural Antibodies.*—In this connexion certain writers, in particular Jobling and Petersen[14] and others, claim that following an injection of foreign proteid an increase in the ferments and antiferments of the body can be demonstrated. But on their own showing the percentage increase is small and unlikely to be of much value. It seems more probable that the increase observed is in some way or other bound up with the leucocytosis, as the curves given by these writers follow very closely those of the leucocytosis. Estimations of the opsonic index have likewise given very little information. Bulloch and Ledingham, with injections of nuclein, claim a temporary increase of opsonins of 50 to 100 per cent.[15] My own experiments have never shown a very definite increase and in some cases a depression has been noted with bacterial vaccines. On the blood complement, injections of vaccine, apart from a slight depression, had no

distinct effect (Fig. 4). But injections of colloidal silver caused a considerable diminution.

(*b*) *Hæmobactericidal Power.*—The antibactericidal power of the blood after foreign protein injections was estimated by the slide cell method of Wright, Colebrook and Storer.[16] In the first experiment detailed below, a rabbit was injected with 1000 million *Bacillus typhosus* intravenously and staphylococcus used as the implant. Estimates were made before the inoculation, 1 hour, and 18 hours after. The results as calculated from the percentage of surviving colonies show a slight increase (30 per cent.) in the killing power of the blood 18 hours after the injection.

In a series of experiments devised with the idea of elucidating this point, I could find little or no evidence that the specific antibodies were increased after the injection of a heterologous antigen or of an inorganic colloid. The results were similar to those obtained in the chemical stimulation of antibodies.[20] The antibodies tested for were hæmolytic amboceptor, agglutinins and bacteriolysins.

The Effects of Colloidal Silica on the Amboceptor Titre of a Rabbit Immunised against Sheep Corpuscles.

An injection of 1 c.cm. of colloidal silica intravenously gave no appreciable rise of titre, as shown

TABLE I.—*White Rabbit: 1000M. Typhoid Intravenously. Implanted Staphylococcus Aureus.*

(A) Implanted per c.cm. of blood. (B) Number implanted (I) and found (F) per 50 c.cm. blood. (C) Percentage of survivors.

Before inoculation.				1 hour after.				18 hours after.			
(A)	(B)		(C)	(A)	(B)		(C)	(A)	(B)		(C)
	I	F			I	F			I	F	
2,500	125	88	70 } Av.	2,500	125	113	90 } Av.	4 500	225	100	44 } Av.
1,250	62·5	56	89 } 83	1,250	62·5	60	96 } 93	2,250	112	52	46 } 50
625	31·2	28	90	625	31·2	29	93	1,125	56	34	60
312	15·6	18	100	312	15·6	19	100	562	28	28	100
250	12·5	22	100	250	12·5	20	100	450	22·5	22	100
Totals ..	246·8	212	86	—	246·8	241	97	—	433·5	236	54
Leucocytes: 13,800				2,200				33,400			

(Table I.) A similar experiment in which colloidal silver was injected and staphylococcus used as the implant gave a somewhat similar result. (Table II.)

TABLE II.—LYTIC POWER.—*Rabbit No. 5: Injected 1000 M. B. typhosus Rawlins.*

15th day: Bacterial suspension diluted (*B. typhosus*).

—	1/10²	1/10³	1/10⁴	1/10⁵	1/10⁶	Colonies.	Average.
Agglutination titre	1 in 2,500.						
Suspension control	++	7,200	910	120	20	Col.	—
Complement control	++	8,400	1,200	132	18	„	—
Serum (1 in 20) ..	++	7,124	672	64	3	„	—
Percentage reduction	—	1	56	47	85	„	*47*
Whole blood (1 in 20)	++	8,200	640	72	7	„	—
Percentage reduction	—	—	31	40	65	„	*45*

16th day: Injected 1 c.cm. colloidal silver (0·05 g.).

Agglutination titre	1 in 320.						
Suspension control..	++	10,400	1,520	184	19	„	—
Complement control	++	++	1,624	203	22	„	—
Serum (1 in 20) ..	++	++	980	87	8	„	—
Percentage reduction	—	—	35	53	58	„	*48*
Whole blood (1 in 20)	++	++	1,240	76	9	„	—
Percentage reduction	—	—	18	57	52	„	*42*

In forming an opinion of the value of these two experiments the considerable technical difficulties must be taken into account; to my mind, after allowing for this, the increase of bactericidal power seems to be outside experimental error.

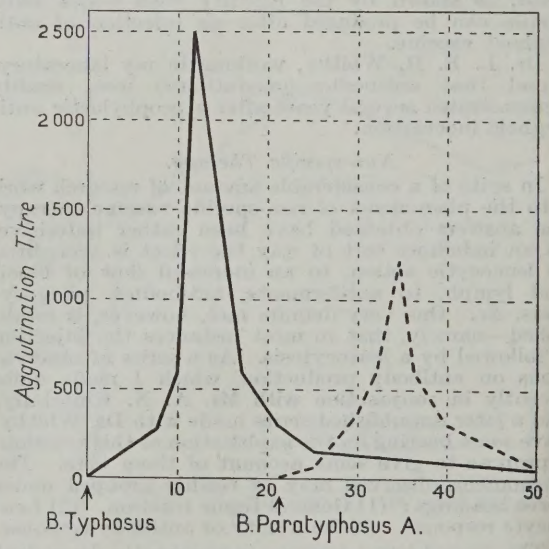
Specific Antibodies.

It has been suggested that one of the main effects of non-specific therapy is produced by a flushing out of the natural and specific antibodies. Hektoen,[17] Conradi, Bieling,[18] and others found that the specific antibodies, agglutinins, &c., were increased after the injection of non-specific antigens. Other observers found no such increase—Baluit, Lüdke,[19] &c. In several of these experiments quoted above I think there is a tendency to lay greater stress on the findings than the results warrant and in such biological tests an increase of even 100 per cent. may not be significant.

in Fig. 5. Similarly injections of bacterial vaccines were without effect (Fig. 6).

[Prof. McIntosh then proceeded to give an account of these various experiments, and showed that injections of heterologous antigens were without appreciable effect on the antibody titre. He showed

FIG. 7.



how one agglutination curve can readily be superimposed on another without interference (Fig. 7). He continued:]

Let us glance back for a moment at what seems a discrepancy between the findings in the bactericidal and hæmobactericidal experiments. The hæmobactericidal results show a slight increase after the injection, while the bactericidal shows no change. In the first place, quite different technique are employed in these two estimations—in the former test the whole blood is used, and in the latter the serum.

If we accept for the sake of argument that the results are correct because they fall in line with the experiments of other workers, then in the whole

blood experiment the leucocytes present are bound to play an important part in the destruction of the test bacteria. After these shock-producing injections the leucocyte-producing tissues are stimulated, and as a result young and vigorous leucocytes are present in greater numbers than before. These leucocytes then exert an increased phagocytic and ferment action. The importance of the leucocyte in this respect has been demonstrated in recent articles by McLean and by Maitland.[21]

I think, therefore, that it may be said that no satisfactory evidence has been brought forward to show that non-specific protein therapy owes its main effects to the stimulation of antibodies—normal or immune. Thus the theory that the substance injected may act as a common antigen or stimulate the tissues which elaborate the antibodies has found no support. Non-specific antigens, I find, have no measurable effect on the antibody titre, and as was shown before, pure chemical substances are without effect on the elaboration of antibodies. The curative effects of non-specific antigens apparently depends chiefly on the general tissue reaction and the leucocyte response.

All experiments have further confirmed the specificity of true immunity reactions, which indicates that the full value of therapeutic immunisation can only be obtained by the use of specific antigens.

SUMMARY.

It would appear, therefore, that in both prophylactic and therapeutic immunisation in man the general trend has been towards simplification. Gradually the living attenuated virus antigen has been replaced by a dead virus or bacterial product, and the dosage accurately controlled. In prophylactic immunisation the protection afforded apparently depends mainly on the specific antibodies elaborated, and on the sensitisation (allergie) of the tissues.

In therapeutic immunisation two factors are at work, a specific and a non-specific. The specific is a typical antibody response, while the non-specific appears to be mainly dependent on a general stimulation of the tissues and leucocytes—in fact, to a process comparable to fever, it is to be noted that in recent years there is a greater tendency to make use of the valuable non-specific response.

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(*Continued at foot of next column.*)

Inaugural Address

ON

PRIVATE MEDICAL PRACTICE AND PREVENTIVE MEDICINE.

Given to the Derby Medical Society on Oct. 14th, 1926,

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IT is not my purpose to mention more than incidentally the official relationship between practitioners in public health and private practitioners. I choose as my more useful task those aspects of the practice of medicine affecting both classes of practitioners, in which active continuous individual collaboration is needed to secure the further advances in national health well within our reach. If in the course of my remarks I appear occasionally didactic, I may claim at least the advantage of experience during seven years in hospital and private work, and during the remainder of a long public health career in organising measures necessitating intimate and almost daily contact with the private practitioner.

Of course, the chief work of the private practitioner is, and for long must continue to be, the guidance of the sick person towards recovery, or the alleviation of his increasing sickness. Except to the callous or the indifferent there must in such work always be a recurrent note of sadness which cannot be escaped; and I know no means for relieving and softening this note more efficacious than the belief that such work—discharged without the hurry which is fatal to efficiency, and carried out with all available scientific aid—not only diminishes the burden of suffering, but also is itself an important means of prevention of disease.

This belief in the wider individual and social importance of private medical work is not a modern conception, though it could not become effective on a considerable scale until medicine became in large measure a branch of exact biological science. There could be no such ideal so long as disease was regarded as a divine or satanic infliction, or as inevitably influenced by the planets. Nor so long as medicine was victimised by doctrines and dogmas, evolved from philosophical hypotheses which were not the final product of carefully checked induction from homogeneous facts, could rational efforts to prevent disease be initiated. The instance in 1853 of an influential petition by a religious body to a Prime Minister of Great Britain to arrange for a national fast on royal authority to prevent the invasion of Asiatic cholera is well known; and it reminds us how recent is our escape from the view that epidemics are a divine visitation, a view as fatal to medical progress as the doctrines which led some doctors to bleed all their patients, and other doctors to give them enormous doses of alcohol.

And yet so long ago as 460 B.C. Hippocrates of Cos had enunciated the truth that disease is a disordered process of nature, and that we must trust to the powers of nature—the *vis medicatrix naturæ*—for controlling it, while aiding this by a judicious medical art. As he said in his "De aere, aquis, et locis":—

"No disease comes from the gods, one more than another, each acknowledging its own natural and manifest cause."

(*Continued from previous column.*)

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But dogmas based on theoretical considerations governed the centuries, and the doctrines of Galen and Aristotle impeded individual inquiry into the processes of nature. Perhaps our English Sydenham (1624–89) was more instrumental than any other on the clinical side, as was his contemporary William Harvey on the scientific side, in bringing back the minds of people from this attitude to the study of medicine as a branch of natural history. He said:—

"The only means of acquiring a correct knowledge of the fundamental principles of medicine consists in attentive observation of the whole of the phenomena of disease, and vigilant and minute inquiry into the progress and fluctuations of the several symptoms, from which alone the true and natural indications of cure can be deducted."

Subservience to unfounded doctrines was slow in disappearing even after Sydenham's day, but it is by the method thus enunciated by him that the private medical practitioner has made the invaluable contributions to the progress of medicine which we owe to him. The most recent illustration of this is furnished by the life and work of Sir James Mackenzie, whose biography has just been published. He succeeded in freeing our conceptions and preconceptions as to cardiac disease from many errors, in unravelling the mechanism underlying symptoms, and in mastering their prognostic significance, and thus opening the way for more successful treatment of cardiac disease and for prevention of its later consequences. I may refer also to the earliest recorded British example of the application of clinical knowledge to the task of discovering the causation of a disease then very prevalent. You have on the table a copy of the classical contribution read in the theatre of the College of Physicians in London on June 29th, 1767, by Sir George Baker, F.R.S., on the "Cause of the Endemial Colic of Devonshire." Baker was a Devonshire man and was familiar with the symptoms and sequelæ of Devonshire colic. Practising in London he was struck with the resemblance between these symptoms and those of lead poisoning in painters, and on the basis of this similarity conceived the view that the Devonshire colic might owe its origin to lead. This was a preliminary hypothesis based on clinical experience, but he determined not to be among those who in his own words are so obsessed by their favourite theories that they "seldom forget opinions at the bedside, which have been the result of much contemplation at home." He therefore proceeded to make an exhaustive examination of the facts.

On investigation he found that the colic of the cider counties was almost confined to Devon, Hereford and Gloucester in the main escaping. Assuming, as appeared to be clear, that cider caused the colic, evidently the Devonshire cider must differ from that of the two other cider counties. As the clinical symptoms were those of lead poisoning, might not this difference consist in lead?

I need not detail how Baker found that the stone troughs in which the apples were ground were clamped in Devon in a way which included soldering with lead, and the use of lead in the fissures of the troughs; while elsewhere other methods were adopted. Nor need I give the actual analyses of cider, positive and negative, clinching the presence in Devonshire cider of lead,—which clinical knowledge showed was competent to produce the widespread disease,—and its absence from the cider of the other counties. Baker was then able to suggest action, which when adopted demonstrated that the colic associated with cider drinking was not caused by tartar or by the acridity of the drink, but by lead accidentally introduced in the process of manufacture.

The history of preventive medicine, and especially of Listerism, is rich in instances in which, as in the outstanding examples to which I have alluded, life has been prolonged and saved, and disease has been reduced by the accurate, painstaking, and intelligent study of clinical medicine. If I were to mention one chief obstacle to many more triumphs of clinical medicine over disease, it would be that so many practitioners appear to have too many patients, or to be otherwise too busy to be able systematically to think out each case after devoting adequate time to its study, having utilised every available means of diagnosis, whether by consultants or otherwise. When I remember the scandalous way in which at dispensaries and hospitals out-patients were formerly "disposed of," sometimes at the rate of two or three minutes for each patient, I realise that much improvement has occurred; and it is satisfactory to note that even busy practitioners when imbued with a sense of their scientific and moral responsibility find time for more careful work, which is among the most valuable of all contributions to preventive medicine in the present day.

But having claimed for clinical medicine and surgery some of the greatest triumphs in preventive medicine, I must now pass on to consider some examples of still existent evils, which need not continue, if all medical practitioners "pulled their whole weight," and if they had the steady coöperation both of patients and of public health authorities. My illustrations will be taken from three special branches of medical public health work, with the genesis and development of which I have been associated. I refer to the special services of maternity and child hygiene, of tuberculosis, and of venereal diseases. In each of these, although public health authorities are concerned chiefly in the prevention of disease, it is impracticable to draw lines of demarcation between treatment and prevention, and there must be secured, if success is to be complete, whole-hearted collaboration between the official and the private practice of medicine.

THE PRIVATE PRACTITIONER AND THE PREVENTION OF TUBERCULOSIS.

Let me instance first tuberculosis which is still responsible for about 9 per cent. of the deaths registered from all causes in England and Wales, although the death-rate from it is considerably less than half that of 40 years ago. This means that in 1925 there occurred 40,387 deaths from a completely preventable disease, and a vast mass of invalidity and suffering of serious social import.

Why is not a more rapid reduction of this unnecessary drain on our national life being secured? To completely answer this question would prevent me from taking the wider survey proposed in this address. Many of the points which I should otherwise stress are embodied in a contribution to THE LANCET, of May 29th, 1926, on the Present Position of the Tuberculosis Problem.

Here I can only allude briefly to some of the obstacles to more rapid progress. Experience on all sides shows that in a large proportion of the total cases of pulmonary tuberculosis treatment is belated and unsatisfactory. The reasons for this are well known. There is first the unwillingness of patients to come for treatment at an early stage, and much educational work is needed—as in the case of cancer—to secure a general recognition of this point. But it must be agreed that a large number of practitioners—happily a decreasing number—appear to fail to examine their patients carefully, and may continue for weeks or even months treating them for winter cough, for influenza, or for other vague conditions, when an accurate diagnosis might have been made much earlier either by the practitioner himself, or by him in consultation with the bacteriologist (by examination of sputum), or with the tuberculosis officer whose gratuitous services are available in every area throughout Great Britain for this purpose. Not only so, but in special cases the help of the X ray photograph is now commonly accessible at the public expense.

The new regulations as to the relation between panel doctors and the tuberculosis officer may be expected to help; but for insurance and non-insurance patients alike there is needed—as we all increasingly realise—closer coöperation between consultants and

general practitioners, first for the use of available special services, but also for similar and extended provision for others now excluded from these services. The days for single-handed practice have gone by. We all have to admit our need for help from brother practitioners who have skill in a special department of medicine. The appreciation of this need and action upon it does not diminish the importance of the general practitioner, who in the interest of his patient is the assessor and executor of the special knowledge which the expert contributes as a guide in the treatment of the patient.

In no disease more than in tuberculosis is the hygienic work of the private practitioner more important. Is this fact universally appreciated? Do we lay adequate stress on the importance of teaching the patient to cough with his mouth screened, as well as on suitable disposal of sputum? Do we impress upon the patient, and do we adequately realise ourselves, that 14 to 15 per cent. of the total deaths registered from tuberculosis occur at ages under 15 years; that juvenile tuberculosis is concerned also in many deaths registered, for instance, as broncho-pneumonia; and that it is highly probable that infection of human origin in childhood bears a large share in producing adult mortality from pulmonary tuberculosis? Above all, do we realise that this mortality in childhood and youth as well as in adult life results nor merely from circumstances of life favouring effective infection, but is due to repeated and excessive doses of infective material received from adults, who are in our professional charge and to whom we may not even have revealed the nature of their disease? There can be no reasonable doubt that if a simple hygienic code of conduct were rigidly followed by every consumptive patient a much more rapid decline of tuberculosis, especially among children, would follow. For the partial character of the success already secured, not only the medical attendant, but also public health authorities who are slack in their administrative and educational work against tuberculosis, and patients and their relatives who fail to adopt the — often inadequately impressed — precautionary measures which are needed must share the heavy burden of responsibility.

THE PRIVATE PRACTITIONER AND VENEREAL DISEASE.

The case of a patient suffering from a venereal disease furnishes an even more striking example of the intimate interlocking of public and private interests. Appreciative testimony should always be given to the public-spirited attitude of the medical profession in welcoming in 1916 the organisation of clinics for the treatment of venereal disease in every county and county borough at the public expense, and without limitation as to the financial resources of the patient. A remarkable decline of deaths from venereal diseases as compared with pre-war years has been associated with these efforts and with the allied work in which private practitioners and public health and military authorities have coöperated. Great progress has been secured; but these diseases continue to be a serious scourge of humanity, one of the chief causes of premature mortality, one of the largest feeders of our lunatic asylums, and a terrible cause of suffering to innocent women and children.

How can we hasten the diminution of these diseases? If doctors are willing and ready to urge upon each mother and father coming within the scope of their practice the value to health of the training of children's characters on sound psychological lines; and if, with their special knowledge of physiology and pathology, they are prepared to advocate sexual continence, and chastity in the unmarried, and not to permit or even silently sanction the assumption that these are not to be expected from the normal man or woman to whom matrimony is impracticable, then great further progress can be made. The difficulty is that many doctors are not convinced on these points; and that especially we often fail to recognise the social aspect of religion which demands the subordination, in matters affecting the communal welfare, of the personal to the communal interest. Is it not the duty of the doctor as much as of the religious leader or the parent to live up to this ideal? But apart from the supremely important ethical aspect of the venereal problem, there is serious neglect of large branches of preventive work for venereal disease, which are medical in character. May we not profitably consider these sins of omission from the standpoints of private practice?

A not inconsiderable proportion of premature births and of stillbirths are due to syphilitic infection of the fœtus. The medical officer of health receiving returns as to stillbirths finds action beset with difficulties, which if initiated by the family doctor would become easy. In what proportion of cases in which there is reasonable suspicion does the doctor arrange for an examination of the mother's blood, or for examination of fœtal tissues for evidence of syphilis? This examination can be obtained gratuitously. And if this is not done, is not he open to the accusation of possible neglect of the vital welfare of the patients entrusted to him in the conditions of private practice? In asking these questions I fully appreciate the difficulties in doing what is suggested, the obstruction of patients to undue "fussiness," and the courage implied in suggesting the need for such examinations. But are not difficulties meant to be overcome, and can we, or ought we, to have an unreproachful conscience, until or unless we have attempted in every instance to fulfil these duties?

Similar questions arise as regards the medical history and condition of the rest of the family when a husband is under our care for syphilis. Inquiry may show the need for examining these, and are we then justified in refraining from pressing for this to be done?

The position teems with difficulty, and my only desire in asking the preceding questions, which might be expanded did time permit, is to assist towards the more rapid development, in any doctor in whom it may be lacking, of the sense of inherent communal responsibility which is implied in the privilege of family medical practice. In the case of tuberculosis the need for frank medical consultations has been emphasised. This need is even greater for the treatment of both syphilis and gonorrhœa, in which very specialised treatment is demanded. The family doctor to justify his continuing to treat these patients until free from infection must be in a position to treat at least as satisfactorily as the medical officer of a venereal disease clinic.

THE FAMILY DOCTOR AND MATERNAL CARE.

It is not sufficiently appreciated that in the ordinary circumstances of general practice the family doctor is as intimately concerned with the physiological as with the pathological side of life. He is the adviser in the physiological process of pregnancy and parturition and of lactation, including the factors making for mental contentment; he is the trusted counsellor as regards the development of the infant and child; and we may reasonably hope that as his knowledge and competence grow, and as public intelligence increases, he will gain his right position as the guide and counsellor of adults in regard to occupational dangers and to habits of life, especially as to right feeding and drinking.

The word *obstetrician*, as you know, carries with it the meaning of "standing by" to watch the normal process of parturition; and in view of the increasing outspokenness of gynæcologists and others as to the amount of mischief done by premature or possibly entirely unnecessary operative interference with the process of childbirth, it may, I think, be regarded as axiomatic that, except when intervention is urgently needed, a return of the obstetrician to the position of expectant attention is needed in many obstetrical practices. To adopt this course requires courage. The doctor is called upon by the suffering mother and the over-anxious relatives to precipitate matters;

but, given a normal presentation and no excessive delay, the responsible accoucheur temporises by means of a well-chosen sedative. When we know that injury by forceps is a common source of puerperal sepsis and of injury to the infant's brain; and that stillbirths, deaths in early infancy from convulsions, and even feeble-mindedness in surviving infants appear to be especially associated with operative midwifery, the need for careful weighing of the circumstances of each case is sufficiently evident.

The best method of attendance in parturition is secured when the doctor has made it a condition of this attendance that the mother shall have adequate prenatal supervision and care. In fact such medical care is more important than the presence of a doctor at the uncomplicated confinement. At the present time probably nine out of ten mothers do not receive such pre-parturient care. And yet we know that it is important for many reasons. The first is physiological. The subsequent health of her infant is dependent above all on efficient motherhood; and this depends on the mother's health, including the factors making for avoidance of maternal anxiety, care of her teeth, and a dietary which contains anti-scorbutic and antirachitic foods in adequate amount. The early diagnosis and treatment of syphilis and of albuminuria are called for; and the ascertainment of pelvic measurements enables the obstetrician to anticipate complicated parturition and take action as needed.

Should not every medical practitioner be prepared to adopt the rule, demanded by medicine and ethics alike, that apart from emergencies he will only act as accoucheur in cases in which antenatal supervision has been secured? The physiological work on behalf of the mother finds its normal sequel in that affecting the infant. Most of us as practising doctors have relatively few personal opportunities for watching the progress of healthy infants, and this is a handicap in medical work for sick infants. But our knowledge has vastly increased, and has become widely available, through health visitors and others, for mothers everywhere; and the application of this knowledge has borne an important part in the halving of the rate of infant mortality since the present century began. This is especially true as regards the problems of nutrition and the more general problems of efficient motherhood. In this fundamental branch of medicine we are now in a position to become to an extent, never before practicable, *doctors*—i.e., teachers of preventive medicine—and thus raise the general standard of maternal and child health.

THE FAMILY DOCTOR AND THE FEEDING OF CHILDREN.

I pass from the problem of assisting the mother towards increased efficiency in motherhood, in its mental and physical aspects, to take an illustration from the dietetics of children. The interesting report by Dr. H. Cory Mann (H.M. Stationery Office, 1926) shows how an average increase in the course of a year in weight of 3·85 lb. and in height of 1·84 in. in boys having a satisfactory basic diet was increased in boys having a daily extra pint of fresh pasteurised milk to 6·98 lb. and 2·63 in., with the additional result that the boys having the extra milk ration were "obviously more fit than those of the other groups."

Our knowledge of the causation of rickets has been greatly extended, thus rendering it possible to prevent much serious and disabling disease. Although rickets does not figure largely in our national death returns, we know how it may turn the balance against recovery in attacks of measles, whooping-cough, and bronchitis; and we know that it is an important element in favouring the serious chronic catarrhal conditions of children. Hence its prevention should be a chief object of the family doctor; and its prevention is easy. Given a satisfactory diet of mother's milk, from a mother who is being adequately nourished, especially as regards dairy products and fresh vegetables; or given satisfactory cow's milk, from cows fed in the open; and given as a supplementary safeguard the administration of minute doses of cod-liver oil from birth onwards—regulated according to the assimilative power of the infant—there need be no rickets. We know also that daily experience of outdoor air and of the sun's rays can to some extent compensate for deficiencies in the dietary, and like ultra-violet radiation are invaluable both in preventing rickets and in curing this disease when already established.

Will it not be a grave reflection on family medical practice, as well as on the publicity work of public health authorities, if within a generation rickets does not become as rare in this country as typhus fever or hæmophilia?

The importance in another connexion of suppressing rickets is too little recognised. We are all aware and ashamed of the fact that the mortality of women in childbearing has been so little lowered, notwithstanding the attention repeatedly drawn to the subject. For its further reduction closer coöperation between public authorities and practitioners is urgently needed. The provision of an experienced consultant available to any practitioner having charge of a difficult confinement would greatly help, and the new notification of puerperal pyrexia, if private doctors and such a consultant coöperate, should also help. The insistence by the medical practitioner on antenatal supervision of his patient will, as already indicated, be even more valuable.

But the prevention of rickets forms a chief means for lowering puerperal mortality. As I have elsewhere pointed out—

> "A sure way of decreasing childbed mortality is to make cod-liver oil a regular item in the dietary of the mother during the first year of her life."

A contracted pelvis goes along with the pigeon-breasted condition, and with the bowed legs of rickets; and such a contracted pelvis is a chief cause of difficult parturition and the fatal sepsis so often associated with this.

THE SCHOOL MEDICAL SERVICE.

In the preceding remarks I have touched only on a few points relating to the work of the private practitioner bearing on three great services of the State in preventive medicine. Similar remarks might be made on the school medical service, the necessity for the beneficent work of which on a much larger scale than has hitherto been secured might be obviated if antituberculosis work, antisyphilitic work, and the care of mothers and infants, and of the pre-school child were carried out systematically and completely. This can never be fully accomplished, unless in the course of his daily work the family doctor comes to regard himself as an integral part of the entire medical organisation for the service of the public.

HOW THE DIPHTHERIA MORTALITY-RATE MIGHT BE IMPROVED.

I am tempted to give one further illustration of our partial failure to secure the saving of life and the prevention of illness which is well within our reach. Consider the present mortality from diphtheria. In 1925 typhoid fever caused 776 deaths in England and Wales, diphtheria 2774 deaths. The first of these diseases we know is rapidly and steadily declining as the result of improved sanitation and sanitary administration; the second we know—judging by past history—will in a few years cause twice or three times the large number of deaths attributed to it last year. In the past typhoid fever also showed epidemic peaks and troughs in a succession of years. Human effort has almost wiped them out; and we know that human effort can do the same for diphtheria. True, infectious material of respiratory origin is more difficult to inhibit than infectious material discharged from the alimentary canal; but

quite apart from such control, it is well within the power of medical practitioners, given intelligent aid by parents, almost entirely to prevent death by diphtheria. (The occasional occurrence of cases of "lightning" virulence forms only a rare exception to this forecast.) That this is not being done is a grave reflection upon the medical profession and upon the parents of the children whose lives are sacrificed to ignorance and negligence. I am not referring solely to the demonstrated possibilities of immunisation of children against diphtheria. Even apart from such immunisation diphtheria within the next five years might be reduced to the level of typhoid fever as a cause of death. This could be done by the prompt administration of diphtheria antitoxin on the first suspicion of diphtheria. Antitoxin is supplied free by local authorities; how seldom is it used by practitioners before the belated admission of their patients to hospital! The failure to do this is due in part to the fatal practice of suspending diagnosis—and even worse, of suspending treatment—until the result of examination of a swab for Klebs-Löffler bacilli has been ascertained. So much is this the case that it may even be debated whether the routine submission of swabs to examination has not caused more deaths than it has prevented.

An important contributory cause of failure to administer antitoxin promptly is the lack of courage shown by the doctor in not acting on suspicion. He may be accused of mistake, if after giving antitoxin a swab is returned as negative. But his explanation to the parents should remove this difficulty; and even if not, can the feared but usually avoidable loss of prestige of the doctor be placed in the balance against the immense saving of child-life which would be secured if the doctor always systematically administered antitoxin when he first suspected diphtheria?

There remains a large class of cases in which the doctor is sent for late in the disease. In view of the occurrence of such cases, the suggestion has been made that every death from diphtheria, like deaths from anæsthetics, should be made the subject of a quasi-judicial inquiry, as being presumably the result of accident or negligence. What a rapid advance in public opinion and in preventive action would be secured if in any district the local medical profession asked the local authority to organise such inquiries and it were done. Let us think how it might be arranged. The local coroner might make inquiries in all such cases, a physician specially chosen for his professional standing and judicial mind being appointed to assist him. On the result of this preliminary inquiry it would be decided whether a formal inquest was indicated. The publicity of such inquiries would, I am confident, be followed in a very few years by a dramatic decline in the death-rate from diphtheria.

THE FAMILY DOCTOR AS PUBLIC HEALTH OFFICER.

The family doctor, if he attempts to follow out some of the suggestions made in preceding remarks, is, it may be urged, owing to his being paid per attendance, open to the accusation of touting for additional work. This fear appears to me to underestimate the intelligence of the average mother and father. We are, furthermore, proud of being family physicians. Privileges always carry obligations, and the paramount indication is to advise the entire family how to avoid sickness. If we do not feel justified in attempting this task—which on general grounds must appeal to us all—are we not confessing by implication that the conditions under which we now practise medicine in our private work are not those which are most conducive to the welfare of the families whose trusted servants we are, and that some radical reconstruction of these arrangements is indicated?

For the one-third of the total population who are insured under the National Health Insurance Act this hypothetical difficulty only exists when the doctor suggests examination of non-panel members of the family. This is not a serious difficulty. As regards expense, the three great official medical services already indicated give a partial answer; and it may be expected that in time the needed additional facilities for pathological diagnosis, for expert consultations, and for hospital treatment—which are indispensable for a satisfactory medical service—will be made available. These cannot reasonably be expected to be forthcoming on the basis of personal payment for personal services. This becomes increasingly costly with each advance in clinical medicine; and this implies an almost intolerable burden, not only on the wage-earner, but also on a large portion of the middle classes. Much will depend on whether medical practitioners generally are prepared to encourage and promote for their patients coöperative efforts on the basis of prior insurance in virtue of which special services, including hospital treatment and skilled nursing, may always be available when needed. Numerous experiments on an insurance basis are in progress to these ends, especially arrangements ensuring medical consultations and hospital treatment whenever these may be required. It is certain that by promotion of such action, and by taking a responsible part in it, family doctors can, while increasing the efficiency of their own medical attendance, strengthen the tie which exists between them and the families which have placed themselves in their charge.

But my intention in this address is not to describe special methods by which the growing and urgent needs of efficient medical practice can be met, but only to indicate the general principles which emerge. I have said enough, I trust, to make it clear that the progress of the application of preventive medicine depends predominantly on the attitude of the medical profession. It has even been said that doctors constitute a chief obstacle to this progress; but this can only be true in those instances in each community in which there is, for instance, failure to use every available means for prompt diagnosis and for adequate treatment of, say, tuberculosis and syphilis; when the duty of prenatal care for every expectant mother whose name is on a doctor's list has not been realised; and when, for instance again, the doctor fails to fulfil his duty as doctor or teacher, in respect of the prevention of rickets, the avoidance of unhygienic habits, and especially in regard to the consumption of alcoholic drinks. In view of the habit-forming risks involved, the doctor who flippantly and without serious reason prescribes alcoholic drinks to an ailing patient is definitely open to the accusation of anti-social action.

In making the preceding remarks, I have claimed the position of family practitioner as well as of public health officer. As practitioners of both these branches of medicine we can claim that we belong to a noble profession, a calling which, in present circumstances, makes it possible for us to influence the ethical as well as the physical course of a multitude of lives. Indeed, if our common work is to be ideally successful, we must increasingly realise that where preventive medicine has hitherto failed—apart from imperfect knowledge—is in regard to those diseases in which character and conduct are concerned. In his intimate relation with the family advised by him who, so much as the doctor, can influence the people to attain to such conduct in life as will improve personal health, and at the same time safeguard the health of others?

SUGAR AND DISEASE.—At the eleventh annual conference promoted by the Durham County Council in connexion with Health Week at Durham, Dr. F. St. J. Steadman, lecturer on dental diseases of children at the Royal Dental Hospital of London, delivered an address on oral sepsis in relation to the public health. He calculated that if the damage done to a race by alcoholism were multiplied by ten we should get some idea of the injury caused by sugar, which was the beginning of dental trouble. Dr. Steadman expressed his belief that if the bad teeth of the inmates of asylums were extracted an appreciable percentage of those inmates would come out and resume their normal position in life.

THE NATURAL FORMATION OF ACQUIRED ADHESIONS.

BY SIR GEORGE LENTHAL CHEATLE, F.R.C.S. ENG.,
SURGEON TO, AND LECTURER IN SURGERY AT, KING'S COLLEGE HOSPITAL.

THE natural formation of an adhesion between apposed surfaces, denuded of their endothelial covering and in contact with each other, is a simple matter to explain. Such adhesions would be formed by a healing process of first or second intention. By a slight stretching of the new connecting tissue thus formed a slightly elongated adhesion would result in some instances.

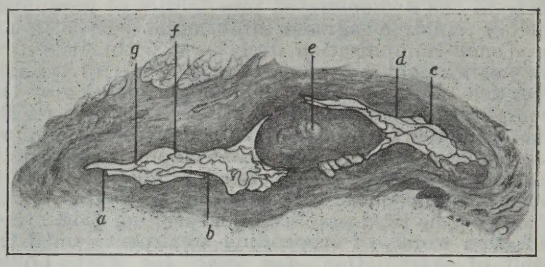
It has always been a more difficult problem for me to account for long, thin adhesions that can so often be observed in serous cavities. It is not practicable to cut whole sections of an abdominal cavity which contains these long adhesions, hence I looked about for a smaller serous cavity that was constantly subjected to traumatic, non-infective inflammation, and I pitched upon the bursa patellæ. I now publish the results of my investigations.

FIG. 1.

An old bursa patellæ which had been constantly subjected to traumatic inflammation over a period of years. It has never suppurated. The bursa has been laid open; a black marker has been inserted behind long adhesions which show excrescences from their surfaces. The base of the bursa shows many excrescences.

Fig. 1 shows a bursa of an old woman whose work necessitated constant kneeling. There never has been suppuration in this bursa. Stretching across its cavity can be seen long, thin adhesions. From the centre of these adhesions appear little outgrowths, the method of formation of which I will subsequently explain. Also, on the exposed surface of the bursa can be seen excrescences of various shapes and sizes. In other parts of this bursa, which are not shown in the picture, but an example of which is seen at *e*, Fig. 2, there were direct adhesions of the nature to which I have already alluded in my opening sentences. Fig. 2 is the microscopical section of a whole bursa patellæ removed from a girl aged 17. This bursa had been inflamed for the first time and was excised ten days after the onset of the attack. The serous and subserous tissues are plicated. They are plicated because these tissues were swollen and increased in size in all dimensions, and, being surrounded by dense connective tissue, they could not expand in all directions. It is to be observed that the cavity of the bursa is filled by a network of fibrin (see D, Fig. 3). Some of the strands of fibrin are attached at their bases (*a* and *b*) to parts of the bursal wall, which are at a long distance from each other. These attachments cannot be explained by any amount of plication.

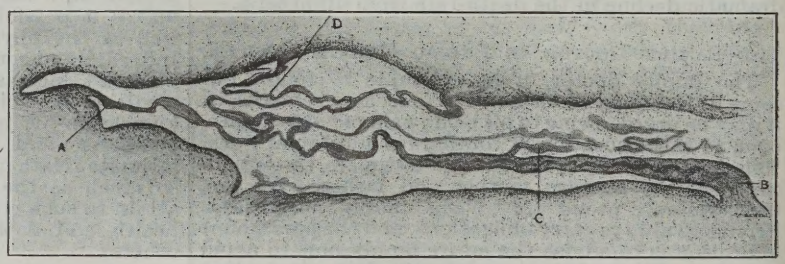
FIG. 2.



The whole section of a bursa excised ten days after the onset of the first attack of inflammation. The surface is seen to be plicated, the interior is filled with a tangled mass of fibrin which is attached at some places, such as *a b*, *c d*, and *f g*, to parts of the surface and in this stage constitute mainly fibrinous adhesions. At *e* will be seen a dense adhesion formed by the *direct method*, when apposed parts have healed while in contact with each other.

What has happened is as follows. The acute traumatic inflammation led to acute inflammation of the parts. Here and there the traumatism rubbed off the endothelium from isolated parts of the surface from which plasma was poured out into the interior of the bursa. This plasma coagulated in the wounds and centre of the cavity, the former giving rise to continuity of attachment of the fibrin in the wounds to the strands of fibrin in the central cavity. At the bases of these attached strands of fibrin two events are to be seen—in Fig. 3. First, the endothelial cells are beginning to grow up the outside surfaces of the strand A and B; secondly, the fibrous tissue (see B) at the bases of the attachment is growing upwards inside this endothelial extension, and taking with it blood-vessels for the nourishment of the new tissues.

FIG. 3.



Represents the microscopical appearances of the adhesions *a b* in Fig. 2. At the base of B will be seen the fibrous tissue spreading up into the strand of fibrin which has also been covered by endothelial cells from the surface of the bursa. At C the organisation of a branch of the adhesion is beginning. The fibrin of this adhesion is gradually being replaced by newly formed connective tissue which is growing into it from the bursal wall (see B). At D can be seen a tangled mass of unorganised fibrin.

As this process continues from two attached bases, the whole strand of fibrin becomes organised into a long adhesion. The excrescences in the middle of the long adhesions, which I pointed out in Fig. 1, are explained by the same process continuing into the tangled parts of the fibrin (see C, Fig. 3). Thus it appears that the

strands of fibrin act in the same way as a hop-pole and forms a scaffolding up which connective tissue grows. The fibrin eventually disappears. The disappearance of an adhesion thus formed probably occurs in the following way. It is known that all young cicatricial tissue is elastic. This elasticity causes pressure upon the newly-formed blood-vessels and diminishes the blood-supply of young adhesions so markedly as to induce their atrophy. Thus they may either disappear, or their bases may remain permanently as excrescences on the surface of the bursal wall. I would term this method in the formation of acquired adhesion the indirect method, and the method with which I opened my article I would describe as the direct method.

The natural formation of acquired adhesions after the occurrence of infective inflammation is a more complicated process than that which occurs after merely a traumatic inflammation. The formation of adhesions after infective inflammation begins with the advent of immunity, when the products of micro-organisms are no longer able to destroy tissues and prevent coagulation of plasma. Upon the acquisition of immunity the organisation of the tangled strands of fibrin begins and continues by the same method as that seen in traumatic adhesions. The main difference in the performance is the delay caused by waiting for the incidence of immunity.

Summary.

The natural formation of acquired adhesions may be due to two methods: 1. The *direct*, in which apposed denuded surfaces in contact with each other heal by first or second intention (see *e*, Fig. 2). 2. The *indirect method*, in which long strands of fibrin become organised by the upgrowth of connective tissue covered by endothelium. They form adventitious connexions between widely separated part of serous cavities (see Figs. 2, 3, 4, and 5).

I must refer the reader to the interesting Hunterian lecture entitled Peritoneal Adhesions, which Mr. Joseph E. Adams delivered in 1913 (vide THE LANCET, 1913, vol. i., p. 663).

AFEBRILE TACHYCARDIA IN EARLY PHTHISIS.

BY ANTHONY DELMEGE, O.B.E. (Mil.), M.R.C.S. ENG., D.P.H.,
ASSISTANT M.O.H. TUBERCULOSIS, WARRINGTON.

THE close attention which has been given during recent years to the study of temperature variations in pulmonary tuberculosis has undoubtedly tended to overshadow its pulse-rate phenomena; the following notes, therefore, may not be without use in drawing attention to their practical importance in adults and especially to the frequent occurrence of long-continued afebrile tachycardia as a sign of activity in early phthisis. By early phthisis I mean definite cases of pulmonary tuberculosis (i.e., sputum-positive cases or those with a history of undoubted hæmoptysis) without extensive signs, marked constitutional disturbance or dyspnœa, and showing no evidence of widespread fibrosis, cardiac disease or displacement, or diffuse bronchitis and emphysema.

The Significance of an Afebrile Tachycardia.

To speak of tachycardia is to assume a normal pulse-rate, hence a preliminary definition of its approximate limits becomes necessary. Starling gives it as 68–72 for those between the ages of 15 and 60. At the same time he lays stress on the wide limits of its normality, and personally I have frequently found an apparent normal of from 58–60 in healthy men. The rate normally shows a diurnal variation of about 10 to 15 beats, rising to a maximum between 4 and 6 P.M. The American National Association in their enumeration of tuberculosis diagnostic standards considers that an average pulse-rate of 85 or more in males and 90 or more in females should be considered abnormal, though in my experience a slower rate than this not infrequently denotes toxæmia if it be associated with an exaggerated diurnal swing. Though one may be misled at times, in actual practice it seems reasonable to take as normal for a given individual the lowest readings persisting for a week or so at a time when all other prognostic criteria are favourable. Such a normal has been assumed in the cases that follow.

The common causes of tachycardia are, of course, eliminated by the usual clinical examination and the use of a careful routine in pulse-taking, but a tachycardia due to anxiety or other depressed emotional state, though it can generally be detected and dealt with by careful questioning and reassurance, often causes difficulty.

On the occurrence then of a persisting afebrile tachycardia in a case of early uncomplicated phthisis we have to decide whether the condition is directly due to the tuberculous toxæmia, or whether it can be set down to one of those other ill-defined and more remote effects of the toxæmia which have been put forward to account for it. Some writers have suggested a small-sized heart, others interstitial neuritis of the vagus, while Pottenger lays great stress on reflex stimulation of the diaphragm and accessory respiratory muscles producing a "deficient inspiratory act," and thus necessitating increased cardiac action to keep up the normal amount of blood delivered to the arteries.

Whatever the accuracy of these theories, in practice the crucial question is whether the condition be a sign of activity in the lesion or not, for if it is, the patient should, of course, remain under treatment until rest has permanently reduced the pulse-rate to normal, while if it is not, there is no object in keeping him in an institution.

Owing to the undue stress formerly laid on the importance of pyrexia as the distinguishing mark of activity, it is still not uncommon to find that an afebrile tachycardia, especially if low and of considerable duration, is unhesitatingly placed in this second category and consequently ignored. Cases such as those quoted below, however, show the not uncommon persistence of an afebrile tachycardia over comparatively long periods of time and emphasise its clinical importance as a sign of activity.

The condition can generally be associated with a definite toxic crisis such as an hæmoptysis or an attack of pleurisy, and can be classified as pre-critical and post-critical according as it precedes or follows this crisis.

Clinically two types of tachycardia are distinguishable: (1) the *swinging* type either an exaggeration of the normal diurnal variation, swinging from about 65 to 80 or 90, or else showing an increased rate throughout with a swing of about 85 to 110; and (2) the *irregular* type, where there is no regular daily variation but the pulse keeps a rough average of 90 or 100. These two types are often, though not always, found in the same tachycardia; indeed, it is quite common after the basic rate has fallen for an increased swing to persist for a considerable time before the condition completely subsides.

As in temperature observations, the morning readings are the more important. This represents what may be conveniently termed the basic rate, the evening reading indicating the degree of irritability or the amplitude of the diurnal swing.

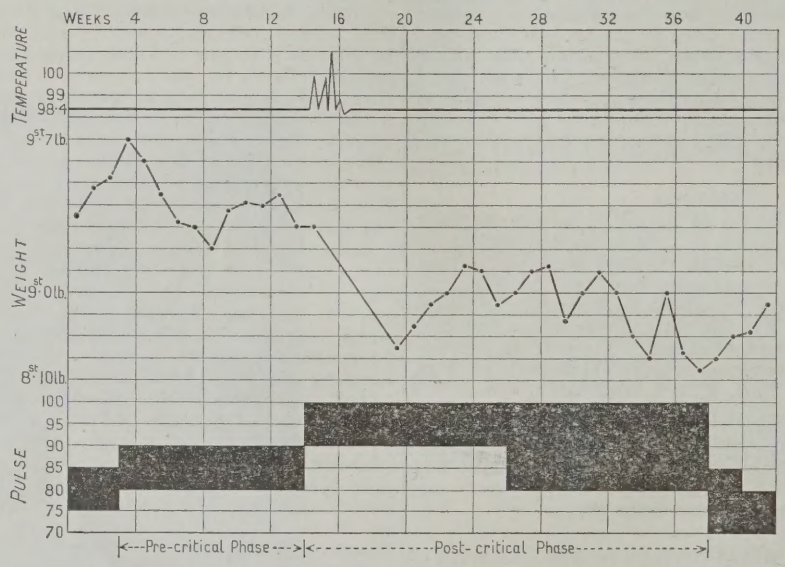
Any toxic condition, such as a mild tonsillitis, or an injection of tuberculin or of a vaccine, may, of course, cause a rise in pulse-rate without a corresponding rise in temperature, and such a tachycardia in which the cause is clear forms a parallel to those of varying duration which occur as part of an undoubted tuberculous toxæmia.

Clinical Illustrations.

One of my patients, a male, aged 22, showed an irregular pre-critical afebrile tachycardia, lasting over a fortnight, and leading to a week's low pyrexia and an hæmoptysis.

In this case a moderate swinging post-critical tachycardia of about nine weeks' duration also followed.

The accompanying diagram illustrates the course of another case and shows the important post-critical tachycardia very clearly. The middle curve is that of the patient's weight, and assuming, as most observers agree, that although increase in weight by no means invariably means improvement, yet loss in weight without change of environment nearly always indicates deterioration, it affords a rough chart of the patient's progress. Below is shown diagrammatically—and, of course, only very approximately—the variations in pulse-note and swing, whilst above is a rough indication of such pyrexia as occurred. The patient, a male, aged 21, had been under treatment for 14 weeks prior to the period shown here. His progress had been quite satisfactory with a weight rising steadily from 8 st. 6 lb. and a pulse swinging consistently between 75 and 85. An hæmoptysis associated with a week's pyrexia indicates the toxic crisis, preceding which is a period of 11 weeks low afebrile tachycardia associated with loss of weight, whilst following is a period of nearly six months high pulse-rate gradually decreasing both in rate and swing.



After seeing a number of these cases it is impossible to avoid the conclusion that in them it is the tachycardia which marks the rise and fall of the toxæmic wave.

Such cases are straightforward enough, but it is often very difficult to come to a speedy conclusion as to the cause when an afebrile tachycardia suddenly begins during treatment or when a patient showing the condition comes under observation for the first time. The evidence furnished by other clinical criteria [1] and the influence of rest and exercise are both of assistance. As regards the former, I have found the facies to be the most reliable aid, but I have not been able to derive much help from the latter owing to the practical difficulties that beset its use as a definite test. When marked the condition reacts to rest in bed, when moderate and subsiding to cautious exercise-grading, any renewal of the tachycardia being taken as an indication for less exercise.

Conclusions.

I have not yet collected sufficient clinical material to warrant any guess at a percentage-figure, but the existence of such cases in early phthisis suggests that just as we find active cases combining pyrexia with a comparatively slow pulse-rate, so also we have these, presumably of the sympatheticotonic type described by Eppinger and Hess, in whom an afebrile tachycardia exists for long periods as almost the sole evidence of activity. Hence, then, while it is, I agree, correct enough strictly speaking to say: "There is no active tuberculosis without pyrexia," an assumption of the contrary "If there is no fever there is no active tuberculosis," or any such statement as "The range of the temperature is the guide to the treatment of pulmonary tuberculosis" [2] seems misleading and not in accordance with the whole of the clinical evidence. On the contrary, the occurrence of this type of case suggests the wisdom of assuming in all cases of early uncomplicated phthisis that, until satisfactory evidence to the contrary is obtained, not only is every afebrile tachycardia a sign of activity, but also that no such case can be considered quiescent so long as it shows a persistently raised pulse-rate, completely apyrexial though its course may have been throughout treatment.

In view of the fact that these cases are almost entirely afebrile, I should like to recur to my opening remark and to put in a plea for more detailed observation of the pulse-rate during the course of early phthisis. In some institutions the pulse seems to be taken once a week only, in others in the case of bed patients only, in many the old type of clinical chart in which the pulse-rate is simply recorded and not charted as a curve, is still in use. Intelligent patients can be taught to take the pulse at least as satisfactorily as the temperature, nor can I think pulse-rate observations in adults as a whole more liable to error, if carefully taken, than those of temperature; the inaccuracies arising from emotional causes — exercise, drugs, &c. —are at any rate no more than those due to atmospheric cold, faulty thermometers, or hurried nurses.

We are all agreed by now that in pulmonary tuberculosis prolonged rest is the key to successful treatment, an opinion strikingly confirmed by the recent radiological work of G. B. Webb,[3] who points out the need of even longer periods of rest than those now usual. The gauging of the requisite amount of rest is in many cases a question of the greatest difficulty for the clinician, and the neglect of any source of information must surely lead to grave errors.

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[1] Tubercle, March, 1924.
[2] Tubercle, September, 1923.
[3] Jour. Amer. Med. Assoc., Sept. 19th, 1925.

A "BAKERS' BED" AT CROYDON.—The Croydon and District Master Bakers' Association has endowed a bed at Croydon Hospital at a cost of £1000. The hospital is in need of a further 150 beds; there are at present 106.

THE LATE DR. LAWRENCE BARNETT.—The death occurred recently of Dr. Lawrence Barnett, who for more than 25 years had practised in Kilburn. A student of University College Hospital, Dr. Barnett qualified in 1884 and graduated as M.D. Lond. three years later. He became house physician at the hospital and afterwards held appointments at the Victoria Hospital for Children, Chelsea, and the Kilburn and Maida Vale Dispensary. Whilst in practice at Kilburn he was elected president of the Willesden and District Medical Society. Dr. Barnett had lately returned from a holiday and succumbed to a brief attack of pneumonia. He leaves a widow, a son, and a daughter.

TRANSCONDYLAR FRACTURES OF THE HUMERUS IN CHILDREN.

BY F. D. SANER, F.R.C.S. ENG.,
SURGEON (AND SURGEON-IN-CHARGE, FRACTURE DEPARTMENT), ROYAL NORTHERN HOSPITAL.

INJURY to the lower end of the humerus in children is of common occurrence, and in a fracture department the transcondylar fracture ranks next in frequency to injuries of the clavicle and radius and ulna, with but little difference in the actual numbers.

For the most part these injuries to the humerus have been described as separations or fracture separations of the lower humeral epiphysis, but it is rare for the epiphyseal line to be actually involved, or for the epiphysis or part of it to be displaced by itself. The transcondylar fracture is transverse in direction and, as the name implies, occurs generally at the level of the condyles or immediately above them; the line of fracture, which is usually somewhat crescentic with the concavity upwards, passes through the olecranon fossa. There is thus a small fragment of diaphysis which, as a rule, is of about the same depth as the epiphysis. The fracture may be incomplete with no displacement, but in the majority of cases it is complete, and the displacement is severe and typical. The whole forearm with the lower humeral epiphysis and the small fragment of diaphysis is carried backwards with tilting of this fragment, while the lower end of the long upper fragment of the diaphysis is thrust forwards. In the severe case the upper fragment may be driven through the skin on the anterior aspect of the arm; the lower fragment seldom pierces the skin posteriorly, since the tendon of the triceps forms a strong barrier against this. In other cases the displacement of the lower humeral fragment with the forearm is medial, and while this may be the main displacement there is, as a general rule, a varying degree of backward displacement in addition.

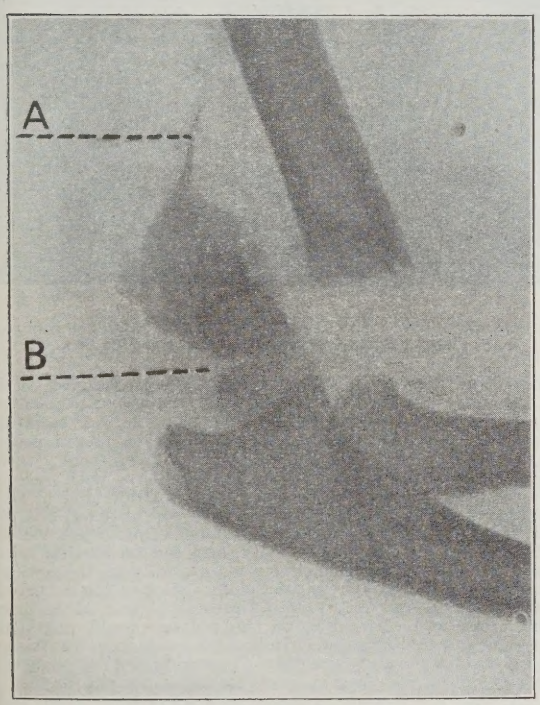
In both types, more especially the former, the periosteum on the back of the humerus is extensively stripped up, while in all cases there is much effusion of blood into the surrounding soft structures, occasionally of such severity as to interfere with the circulation of the hand. On two occasions in my experience gangrene of the fingers has followed such an injury, in one case as a direct result of the tense effusion round the site of fracture, in the other case there was the additional factor that the elbow had been fixed in a flexed position in the presence of much swelling.

The deformity of the elbow is, as a rule, obvious, though the contour of the region may be entirely altered and the bony landmarks obliterated by the swelling from effused blood. An accurate diagnosis of these injuries is impossible without X rays, and radiograms in two planes should be taken at the earliest possible moment and, apart from temporary immobilisation, it is better not to attempt any treatment until a diagnosis has been made. In all injuries in the region of the elbow-joint it is a great help to have control radiograms of the sound elbow for comparison.

Principles of Treatment.

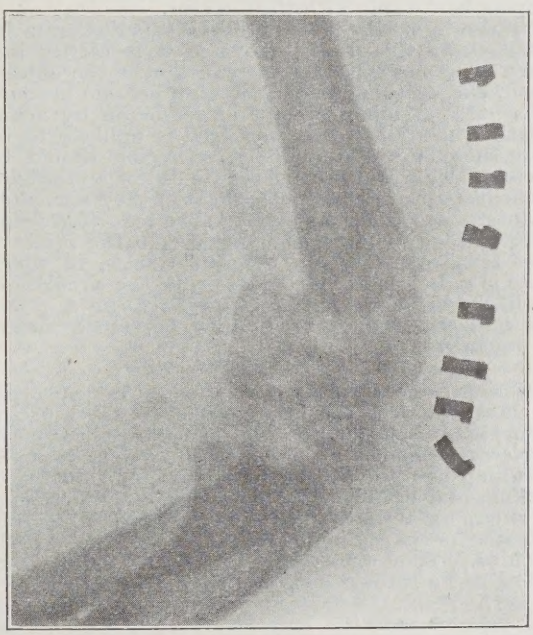
There is probably no region in the body where the attempts of Nature to repair completely a fracture with displaced fragments are so well seen. As shown in the radiogram (Fig. 1), callus is quickly laid down between the fragments, and if left uncorrected the lower end of the shaft is gradually reconstructed, its displaced segment absorbed, and eventually a new diaphysis with its lower end curved backwards is formed (Lane). An arm almost good in function may thus be obtained, but there is always very definite limitation of flexion and extension movements at the elbow. In the same way a lateral displacement, if uncorrected, will be repaired with

FIG. 1.



Boy, aged 8. Transcondylar fracture of left humerus with typical displacement, four weeks after injury.
A, Line of callus formation. B, Epiphyseal line.

FIG. 2.



Same case as Fig. 1 after reduction by open operation.

eventually a valgus or varus deformity at the elbow.

By whatever means, therefore, reduction of these fractures is carried out in the original instance, an accurate alignment must be obtained to guarantee an arm normal in shape and function. Even with a perfect reduction the process of repair is naturally slow; the callus thrown out mechanically obstructs movements for the time, and until this has been absorbed and the grooves and fossæ of the lower end of the humerus remodelled full movements are impossible. This fact emphasises two very important points in the treatment: first, as already mentioned for a somewhat different reason, the necessity for an accurate alignment, since the greater the displacement in any fracture the greater the amount of callus formed; second, the necessity of avoiding undue activity in the after-treatment.

In all cases in which there is a displacement of fractures reduction by manipulation under full anæsthesia should be attempted as soon as possible. With the upper arm held, the hand or wrist is grasped and steady traction exerted with the forearm as fully extended as is possible, and while the traction is maintained the forearm is slowly flexed on the arm, and the position of flexion secured by a strip of adhesive plaster passed round the wrist and upper arm, wool, and bandage. Such movements are carried out to correct the common backward displacement, for the lateral displacement, while traction is maintained, direct pressure is applied to the fragments and afterwards the arm flexed as before.

It is well to emphasise that the position of flexion per se does not accomplish anything, but when the fracture has been reduced it creates traction on the lower humeral fragment and prevents it again slipping backwards with the forearm.

In the majority of fractures reduction can be obtained by this means provided it is carried out early. The main barrier to reduction is the effused blood, and as this organises it may become insuperable. If a genuine attempt at reduction by manipulation has failed, a second trial is unlikely to be more successful, and an open operation should be advised. This should have for its object a clearance of the blood-clot and a replacement of the fragments; no internal fixation is necessary, the reduction being maintained by the flexed position. In the presence of a tense effusion into the soft tissues, in which there is a danger of interference with the circulation, or likely to be with the elbow fixed in a flexed position, an open operation may become a matter of urgency.

After-treatment.

During the succeeding days the gentlest effleurage is employed over the injured area to assist in the absorption of effused products and the circulation of the arm generally. After a week or ten days the arm may be released to a right angle and carried in a sling, and from now onwards gradually increasing *voluntary* movements are encouraged. Vigorous massage or passive movements are to be strictly avoided. They tend only to irritate, cause more callus to be thrown out, and thus defeat their own object. From the first it should be impressed on the parents that the movements at the elbow are likely to be limited for a considerable time, that this is due to the natural course of repair, not a complication, and provided an accurate alignment has been obtained in the first instance an eventual return of perfect function can be assured. The idea of carrying out forceful movements of the elbow under anæsthesia has, it is to be hoped, passed; such a procedure is directly contra-indicated, as already explained, since the limitation is not due to adhesions in the elbow-joint or between surrounding soft structures, but to callus filling the grooves and fossæ of the lower end of the humerus. Occasionally in children who are unable voluntarily to overcome the spasm of their muscles or are fearful of attempting movement slight passive movements may be employed as a means of suggestion that such are possible.

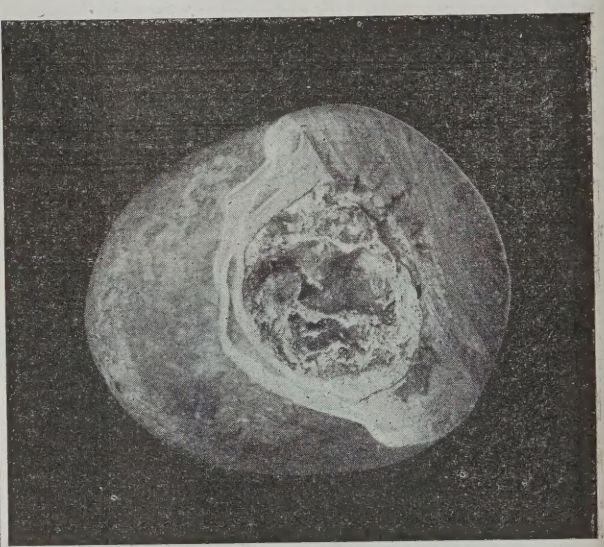
Clinical and Laboratory Notes.

VESICAL CALCULUS WITH PARAFFIN NUCLEUS.

BY ALEX. E. ROCHE, M.B., M.CH., F.R.C.S. ENG.,
CLINICAL ASSISTANT, LATE H.S. AND R.S.O., ST. PETER'S HOSPITAL.

THE interesting account in THE LANCET of July 31st by Dr. Ernest Shaw of a vesical calculus with nucleus of paraffin wax prompts the report of a similar case recently under the care of Mr. Ogier Ward, whom I wish to thank for permission to publish it.

A man, aged 53, was admitted to St. Peter's Hospital on March 9th, 1926, perineal pain being his main trouble. Eight years previously the pain had been experienced on micturition; also slight pain in the penis, and difficulty on micturition. A free interval of two years was followed by a renewal of symptoms, together with retention of urine, such attacks having also occurred subsequently, with



Photograph of stone (actual size), part of it having been removed to display central irregular mass of paraffin wax.

intervals of 1 to 21 days. A symptom very suggestive of the presence of a stone in the bladder was that the patient found it easier to micturate when lying on his side or bending forward. There were straining and delay in commencing the stream, which was occasionally intermittent, with terminal dribbling; and there was urgency, with incontinence if early micturition was not forthcoming. The passage of stones or gravel had never been noticed, but he complained of slime and of the bad smell of his urine, which had been red six years previously, and red on and off ever since, more so on exercise, but not especially at the end of micturition; nor had there been clots. Micturition occurred hourly by day, and six to eight times at night. More than eight years had elapsed since the patient could pass the night without micturating. He had no headaches, but backache now and then for six years; occasionally nausea with the pain, but no vomiting; shivers formerly, but not for years.

Condition on Examination.—The tongue was clean and slightly moist, the patient stating that during the last three to four years it became dry, though thirst was normal. He was observed to bend down, with his head nearly to the floor, in an unsuccessful attempt to micturate. Cystoscopy then revealed four ounces of turbid urine, a very œdematous mucosa, and a free stone, which was felt and heard to grate. The prostate felt normal on rectal examination, while, on bimanual examination, a body was felt above the prostate. On March 10th a stone, too large, hard, and smooth for lithotrity, was removed suprapubically by Mr. Ward. After a period of drainage the patient was discharged healed and well on April 5th.

A report by Dr. H. E. Archer states that the calculus (whose present weight, after about a quarter of it has been removed, is 48 gm., and whose original

weight must therefore have been about 64 gm.) is smooth, irregularly oval, pale brown, and very hard, measuring 5·5 by 4·8 by 3·0 cm., and being made up of an outermost layer consisting of ammonium magnesium phosphate + + +, calcium phosphate + +, and magnesium carbonate (a trace); a middle layer of practically the same constituents, and a central core of hard paraffin, having a melting-point of 54° C. Thus the paraffin would not be liquid at body temperature, but it would be pliable, and one can imagine a portion of moulded candle-guttering reaching the bladder by being propelled by another portion lying in the urethra, and manipulated, directly or indirectly, by the patient, the urethral portion being subsequently withdrawn, or passed with the urine, the intravesical portion being prevented from doing so by becoming coiled, or by otherwise sharing in the general difficulty of escape experienced by foreign bodies in the bladder. Though such may be the method of introduction of paraffin wax into the bladder in some cases, interrogation of the above patient revealed another method in the present case, he affirming that, when aged 17 or 18, he had some difficulty in passing water, due to "a bit of a stricture," and that this was lessened by the passage of a piece of solid rubber, about eight inches long, which is described as being like a catheter, "but without a hole in it," this urethral instrumentation being performed "scores of times," and the instrument, previously greased with warm paraffin wax from a lighted candle, remaining in the urethra for ten minutes at a time. The method described by the patient is probably a correct account of the manner in which the paraffin reached his bladder, small quantities of wax being left there on each occasion, though the motive was almost certainly sexual, not urinary.

One wonders whether foreign bodies, such as paraffin wax, may not compose the nuclei of bladder stones less rarely than has been supposed or reported, and whether their comparative rarity may not be partially explicable by the failure to transect and analyse, where possible, all stones removed from the bladder by lithotomy, and further accounted for by the adoption of the operation of litholapaxy.

A CASE OF GENERAL PARALYSIS WITH BENIGN TERTIAN MALARIA.

BY GEOFFREY T. BAKER, *M.C.*, L.M.S.S.A. LOND.,
ASSISTANT MEDICAL OFFICER, KENT COUNTY MENTAL HOSPITAL, CHARTHAM DOWN, NEAR CANTERBURY.

THE interest in this case would appear to lie in the fact that the patient had malaria of long standing and that general paralysis developed in spite of this, and also that a further severe relapse of malaria in no way hindered the progress of the cerebral condition to a fatal termination.

A man, aged 39, was admitted to the Kent County Mental Hospital on Jan. 18th, 1926, with general paralysis and a history of malaria and heat-stroke. The blood and C.S.F. were taken on Jan. 21st, 1926, and both showed a complete positive Wassermann reaction. The patient was confused, quite disorientated, wet and dirty in habits, much hallucinated, and very restless. By the beginning of April he had quieted down sufficiently for a course of Stärcke treatment to be begun, but before the fourth injection could be given he had again become very restless and troublesome, and the treatment had to be abandoned. There was then little change in his condition until August 1st, when he had two bouts of fever rising to 103° F., with one day intervening, when his temperature was subnormal. The blood was examined and benign tertian malarial parasites were found to be present. Fifteen typical rigors followed with one or two atypical ones, and, as there was no improvement in his mental condition, quinine treatment was commenced. On Sept. 6th the patient died, having previously developed retention of urine and multiple syphilitic sores.

I am indebted to Dr. Abdy Collins, medical superintendent, Chartham, for permission to publish the notes of this case.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

A MEETING of this Section was held on Oct. 21st, Dr. J. H. SEQUEIRA, the President, being in the chair.

EXHIBITION OF CASES.

Dr. G. B. DOWLING showed a case of lichen nitidus in a woman of 28 who had complained for a year of a papular eruption of various parts of the body, with very slight irritation. Over the knees, elbows, and front of the wrist these became confluent, forming brownish-red patches rather like lichenification. Friction played a part in the production of these areas. Histologically there was characteristic subepidermal infiltration with a giant cell here and there. The erosion from beneath amounted in the confluent areas almost to complete disappearance. He also showed a case of syphilitic macular atrophy in a man of 44 who had had primary syphilis with phagedena 24 years ago, followed in three months by a generalised eruption of raised pink spots. A few months later they assumed their present form—a large number of symmetrical lenticular elevations, round or oval, distributed mainly along the lines of cleavage on the back, chest, abdomen, and shoulders. Some were firm, others soft with wrinkles like cigarette paper. There was a definite resemblance to some cases of Buzzi's disease, which was no more than a macular atrophy, not necessarily due to syphilis.

Dr. H. HALDIN-DAVIS showed two cases of pigmentation. One was argyria in a woman who had taken silver nitrate pills thrice daily for a year 20 years ago and had been in her present state ever since. Argyria was very capricious in its incidence; in another case it had developed after the use of protargol swabs for six weeks; this, however, disappeared in three years. His second case, "pigmentation of unknown origin," corresponded with a type described by Barber as "poikiloderma pigmentare reticularis," although in this instance no atrophy had been noted. He regarded the condition as some sort of vasomotor disturbance, associated with the menstrual trouble of six years' standing.

Dr. PARKES WEBER showed a case of von Recklinghausen's disease which he had presented to the old Dermatological Society in 1905 in its earliest pigmentary "forme fruste." It was now fully developed. His second case was one of pigmentation of the thigh associated with varicose veins and a condition rather like "multiple idiopathic hæmorrhagic sarcoma" (Kaposi). The patient was a fat plethoric Jewess of 47, who last winter developed irregular, raised, rough, purplish patches with much itching. Adjoining these was an irregular area of brown pigmentation which had appeared a month earlier and never itched. The Wassermann was negative. Dr. A. M. H. Gray had examined sections of an excised nodule and thought them strongly suggestive of lichen planus. Sir Jonathan Hutchinson had described lesions resembling "multiple idiopathic hæmorrhagic sarcoma" as occurring in plethoric and gouty individuals. His third case was a boy of 3 with hypoplasia (aplasia) pilorum moniliformis of the scalp, which was rough and in some parts scaly and red, with stumpy hairs. Microscopically the hairs were beaded with alternate constrictions and spindle-like enlargements. Some of the eyebrow and eyelash hairs were similarly affected. The case was typical. Dr. Weber suggested that there might be a series of cases connecting congenital alopecia on the one hand and MacLeod's "ichthyosis follicularis" on the other, with congenital hypoplasia pilorum moniliformis in the middle. This was a congenital condition allied to nævi.

Dr. H. W. BARBER showed a case of lichen spinulosus in a boy of 12. The eruption was first noticed ten

weeks ago on the legs, and later it appeared on the arms, neck, face, and trunk. It consisted of follicular papules, the colour of normal skin or a little red at the base, with a projecting horny spike. This case corresponded with the 14 cases described by Peyri Rocamora in 1922, in which there was always a resistant stomatitis. In this boy there had been a trace of something like perlèche at the angles of the mouth and a few red spots on the mucosa of the cheek. The relationship of lichen spinulosus to folliculitis decalvans and of both to lichen plano-pilaris had to be considered.

Dr. E. GRAHAM LITTLE showed a case of nodular leprosy which he had brought before the Section in May last as one of the most acute cases he had ever seen; a very extensive eruption had appeared within ten days. Instead of returning to the East, as advised, the patient had come under the care of Dr. Hasson, whose treatment had resulted in an amazing improvement. So complete was the involution of the disease that the bacilli could no longer be found in the nose or in the artificial blisters.

Dr. J. HASSON then described his treatment with stock vaccine made from the blisters of many patients.[1] This patient had had 53 injections twice or thrice a week, mostly intravenously, and some subcutaneously. In a fortnight æsthesia had reappeared. After six weeks he was as "cured" as it was possible to pronounce any man cured. Dr. Hasson had now obtained apparent cure in 45 cases.

Dr. GRAHAM LITTLE then drew attention to a large coccus isolated from three different cases, one of glossitis migrans and the others more like a leucoplakia of the lichen planus type. This organism had been grown with great difficulty anaerobically and was unfamiliar to the bacteriologists of St. Mary's Hospital. His third case was one of lupoid infection of the skin following a successful course of electrolysis for removal of hair. There had been no scarring at the time, but the lesion appeared two years later.

Dr. H. MACCORMAC showed a Covent Garden porter, aged 25, who was accustomed to carry loads on his head and who had developed a bald spot very like an ecclesiastical tonsure and with definite lichenisation. The patient assured him that the condition was not uncommon. He proposed to name it "Covent Garden tonsure."

Dr. J. H. T. DAVIES showed a case of lichen planus confined to the mouth.

Prof. C. RASCH, of Copenhagen, then contributed

SOME HISTORICAL AND CLINICAL REMARKS ON THE EFFECT OF LIGHT ON THE SKIN AND SKIN DISEASES.

He began by condemning the attitude of those who regarded clinical medicine as a played-out science; modern medicine rested equally on two supporting pillars—clinical and experimental work. The first observations on the effect of sunlight on the skin were made by Everard Home in the Philosophical Transactions for 1821. Home had exposed the backs of his hands to the sun with a thermometer on each; one was uncovered, the other had a covering of black cloth. The former hand was scorched on each occasion, the latter was unaffected, but its thermometer registered a much higher temperature. He concluded that the black rete mucosum of the negro was a defence against the sun's rays. His experiments were confirmed later by Humphry Davy's brother John. Their experiments entitled them to the honour of the discovery that the power of the sun was due to light and not to heat.

The Effects of Light on Abnormal Skin.

Willan in 1798 had described an "eczema solare," and other sun-produced lesions were noted by Rayer (1835), Bazin (1860), Kaposi (1870), J. Hutchinson (1878), and Veiel (1887). In 1906 Dubreuilh, of Bordeaux, had stated that most of the epitheliomata of the face and so-called senile alterations of the skin were produced by the light of the sun, and his conclusion had been foreshadowed by Robert Bowles in 1893, who had remarked that if the sun's rays would produce sunburn, erythema, and blistering they were clearly capable of producing deep and intractable ulceration of a low and chronic nature. More recently "permanent freckles" had been described by J. H. Sequeira (1911) and "war melanosis" by Riehl (1917). Between some of these conditions there were transition stages; Hutchinson's prurigo, for instance, could not be kept distinct from the polymorphic and eczema-like eruption described by the speaker. He believed, in fact, that all these eruptions should be included under the one term, "chronic polymorphic light dermatitis." Individual skins reacted to the itching caused by light with papular, urticarial, erythematous, or lichenoid lesions, and secondary infections might supervene, and on rare occasions small necroses might represent a transition to the hydroa vacciniformis of Bazin. These light eruptions might be hereditary and were very common among blondes—e.g., in Denmark out of 31,000 patients in five years no less than 230 had a light-lesion. It might be surmised that the itching was the pathogenic factor in the production of a rash.

Hydroa Vacciniforme and Porphyrinuria.

The speaker believed that two diseases were being confused under this name. One was the affection described by Bazin; the other was a special symptom-complex including porphyrinuria, large pemphigus-like blebs on the face, ears, and hands leading to gangrene, and atrophic processes in the fingers reminiscent of scleroderma or Raynaud's disease. This condition was first attributed to light by Prof. McCall Anderson in 1898.[2] Porphyrinuria was not always associated with sensitiveness to light, and the administration of sulphonal and trional did not cause skin trouble. Possibly the real cause of all the symptoms was some unknown endocrine factor. The significance of porphyrinuria in light diseases and the relation of these conditions to epidermolysis bullosa hereditaria needed further investigation. Alcoholism also seemed to be a sensitiser for the development of light rashes.

Other Diseases Connected with Light.

In Denmark they had had two cases each of xeroderma pigmentosum, war melanosis, and colloid degeneration of the skin; pellagra was unknown. The chronic redness and thickness of the skin of the neck described by Jadassohn and Nikolsky was common, as were senile degeneration of elastic tissue and other so-called "senile" lesions.

Light in Other Diseases.

It was an old experience that the rash of small-pox healed without scars if the patient were kept in the dark, and this treatment ought to be used in all cases. Pityriasis simplex was often irritated and was sometimes made eczematous by light. Acute eczema and many kinds of artificial dermatitis tended to become localised in the sites of chronic changes due to light. For instance, sulphur or fur dermatitis might be localised in the sterno-clavicular triangle, although the exciting agent had spread over the whole chest. Rosacea was greatly aggravated by light; cases of this disease could profitably be divided into three groups: (1) rosacea cum acne, curable with sulphur; (2) rosacea cum pityriasi, curable with tar; and (3) rosacea cum acne et pityriasi, curable with sulphur plus tar (ichthyol). Lupus erythematodes might be caused by light and was decidedly aggravated by it: the lesion was often limited by clothing or ornaments. Tuberculosis and light were the most important internal and external causes respectively. The fresh eruptions disappeared rapidly if the patient were put to bed in the dark. Other skin diseases aggravated or caused by light were dermatitis herpetiformis, Besnier's prurigo, purpura, and erythema multiforme

[1] THE LANCET, 1926, i., 234.

[2] British Journal of Dermatology, January.

Skin Disease Improved by Light.

Few skin conditions benefited from light, and the value of the general light bath was usually due to its action on the organism as a whole. Acne vulgaris, secondary syphilitic infections, elephantiasis, and lichen planus might be benefited, and light prevented the development of a papular syphilitic lesion. Even in these cases, however, it seemed that pigmentation played a part and that the curative effect was not purely local.

It was a common mistake to think that as much light as possible was good for all people and all diseases.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

A MEETING of this Society was held in Liverpool on Oct. 15th, Mr. W. GOUGH (Leeds), the President, in the chair.

Miss H. M. DUVALL (Liverpool), on behalf of Prof. E. E. GLYNN and herself, described a case of

Rupture of the Bladder during Labour.

The patient was a primigravida aged 29, and, during her pregnancy, had been a regular attendant at the antenatal clinic attached to the hospital. Her pelvic measurements were normal, and so was the urine, which for some time had been tested weekly.

On admission (April 27th) she was at full term; the os was one finger dilated, the head well down in the pelvis, and the position left occipito-anterior. During the next three days she had intermittent labour pains. The membranes ruptured at 6 P.M. on May 1st, and the os was three-quarters dilated at 8 P.M. At 3 A.M. on May 2nd the patient is related to have given a piercing shriek, and complained of acute abdominal pain. The nurse felt the uterus, and there was no contraction, but the patient was rather cold and clammy.

After this the patient became somewhat hysterical, and the house surgeon was sent for at 6.30 A.M. As the labour had been long, and the interest of the child seemed to demand it, low forceps were applied under chloroform anæsthesia, and the patient easily delivered of a living male child weighing 6 lb. 5 oz. There was a perineal tear of the second degree, and this was repaired. The third stage occupied one and a half hours, and the placenta and membranes were delivered by manual expression. The condition of the patient was then considered satisfactory. The patient passed urine voluntarily just before the anæsthetic, and no urine was obtained on the passage of a rubber catheter before the application of the forceps.

Her condition gave rise to no anxiety during the next 24 hours, but as she passed no urine during that time, she was catheterised, and 8 oz. of "smoky" urine, which is said to have contained no blood or albumin, was withdrawn. On the following day she passed 8 oz. of urine voluntarily at 2 A.M., and 6 oz. again at 2 P.M. By the evening she had become very ill,the complexion sallow, the temperature 100·2° F., the pulse rapid and almost imperceptible, and the respirations quickened. The abdomen was much distended and very tympanitic, and there was pain in the left iliac region. The usual restoratives were given, but she was much worse by the next morning, with a frequent brownish-green vomit and incontinence of fæces. She died three days and five hours after delivery.

At a post-mortem examination made seven hours after death the subcutaneous fat of the abdominal wall was found to be fully three to four inches thick, which had hindered accurate diagnosis of the abdominal condition during life. The peritoneal cavity held about six pints of a turbid and slightly blood-stained fluid, smelling strongly of urine and containing large flakes of recent fibrin. The intestines were distended to about double their normal size, and the peritoneal coat was injected. On examining the bladder, a small oval perforation, which would just admit the points of a Spencer-Wells forceps, and the edges of which were gangrenous, was discovered on the posterior surface about midway between the fundus and the utero-vesical reflection, and half an inch from the mid-line. Radiating from the hole were three rents involving the serous and muscular coats, but not the mucous membrane. When the bladder was slit open from the front, the perforation was seen to be surrounded by an area containing numerous small hæmorrhages. Apart from this the lining epithelium appeared to be normal, as were also the ureters and their orifices. The kidneys and other organs showed no evidence of disease. The uterus was uninjured except for a deep right-sided cervical tear.

The cause of death in this case, said Miss Duvall, was undoubtedly rupture of the bladder followed by peritonitis. When and why had this accident occurred? It must be a very unusual one, as after a good deal of search she could only find two cases recorded in which intraperitoneal rupture occurred actually during the course of a full-term labour.[1]

"The wall" of the uterus in the present case, said Miss Duvall, was somewhat thinner than normal; the thickness of the muscular and mucous coats was just over 2 mm., whereas the normal measurement was 6·8 mm. There was no cystitis, the muscle was not diseased, and there was no inflammation. The situation of the lesion made direct injury by the forceps unlikely. The presence of distension at any time during the labour was not shown in the history, but the first stage had been long, and the patient might not have been properly emptying the bladder throughout. The temperature chart was consistent with an ingravescent sepsis. The amount of urine obtained after delivery was only 22 oz. in three days, and it was curious to note that the patient had been able on two and possibly three occasions to pass urine voluntarily, presumably after rupture. In view, however, of the very small leak, this could not be considered an impossibility.

In the opinion of Prof. Glynn and Miss Duvall, all these facts pointed to the rupture having occurred prior to or at the time of delivery, the cause being increased intra-abdominal pressure due to the pains of labour on a bladder probably over-distended, and therefore weakened, but certainly not otherwise diseased.

The PRESIDENT considered that the rupture occurred when the patient cried out.

Prof. BLAIR BELL (Liverpool) thought there was no hysteria about the case, that the smoky urine had been of great significance, and that measurement of the urine would have been of aid in diagnosis.

Dr. J. W. A. HUNTER, with acknowledgment to Dr. W. Fletcher Shaw, gave an account of

A Case of Abdominal Pregnancy.

The patient was aged 30 and was 3-para. She was admitted to St. Mary's Hospital, Manchester, on August 23rd last with the following history.

Her last menstrual period was on March 16th, and was followed by several weeks of irregular bleeding for which she was curetted in one of the outlying hospitals, a diagnosis of incomplete abortion having been made. After curettage the bleeding ceased, and she was sent home, but shortly afterwards she noticed a gradual increase in the size of the abdomen. About the beginning of July she had a sudden attack of acute pain in the abdomen with sudden enlargement of the swelling; accompanying the pain were recurrent attacks of vomiting and faintness. During the six weeks before admission there was progressive abdominal enlargement with increasing tenderness and recurrent attacks of severe abdominal pain often accompanied by vomiting. Six days before admission there was slight loss of blood from the vagina. Beyond these, increasing frequency of micturition and gradually increasing constipation were her only symptoms.

On admission she was rather pale, collapsed, and obviously in considerable pain. Her pulse was small and rapid, the rate varying between 120 and 140, and the temperature was 100° F. Examination of the abdomen showed it to be enlarged to the size of an eight months pregnancy, the tumour extending almost to the ensiform cartilage. The swelling tended to occupy more the left side of the abdomen than the right, and was hard, rather fixed and extremely tender, the whole picture closely resembling that of a concealed accidental hæmorrhage. On palpation it was possible to elicit fluctuation in the upper left portion, but the mass in the right iliac fossa was quite hard and solid. Percussion did not show any dullness in the flanks, and on auscultation no fœtal heart sounds or movements could be heard. Vaginal examination was unsatisfactory on account of the extreme pain and tenderness, but suggested a firm mass continuous with the cervix occupying the lower right quadrant of the abdomen, and a large cystic mass inseparable from it above and to the left.

[1] Jour. Obst. and Gyn., vol. vi., p. 354; and Trans. Obst Soc. Lond., vol. xlix., p. 171.

The diagnosis lay between concealed accidental hæmorrhage and a twisted ovarian cyst complicating early pregnancy. The possibility of an abdominal pregnancy was considered, but rather discounted in view of the previous curettage and absence of other signs.

The patient was kept under observation for 24 hours, but did not improve; in fact, she became rather worse. operation was then decided upon, a diagnosis of twisted ovarian cyst complicating early pregnancy having been made.

On opening the abdomen a large rather thick-walled cyst was seen almost filling the peritoneal cavity, which also contained a large amount of recent fluid blood and old blood-clot. On extending the incision the cyst was seen to arise from the left broad ligament, which had been stretched and lifted up, while the uterus—enlarged to the size of a three months pregnancy—was closely apposed on the right side. On attempting to separate the cyst it was found to be adherent to the abdominal wall in front and to the omentum and small intestine above and behind, and during this separation the anterior wall suddenly gave way and a large quantity of liquor, followed by a living child, came out. The gestation sac was then seen to be composed of a much stretched-out broad ligament anteriorly, while posteriorly it had burrowed under and lifted up the cæcum and mesentery of the small intestine; the right colic artery was running in the wall of the sac. The placenta was hurriedly removed, and the sac packed with gauze and marsupialised. During removal of the placenta there was very little bleeding, but there was considerable hæmorrhage in the abdominal cavity, probably from a torn branch of the right colic artery.

After operation the patient was very collapsed and failed to respond to treatment, dying shortly after return to the ward. The child, weighing 2½ lb., was quite normal and lived for 14 days.

The so-called incomplete abortion, said Dr. Hunter, for which the patient had been curetted was probably an early ectopic gestation; very possibly rupture of the sac into the left broad ligament had occurred during this manipulation. The associated hydramnios almost excused the mistake in diagnosis, for even when the cyst was exposed it was impossible to palpate the fœtus through its walls. To avoid a fatal result had been very difficult in view of the way in which the sac had displaced the mesentery and bowel. Perhaps incision of the sac, emptying of the contents and immediate packing would have given the one chance of a successful result.

Dr. J. H. WILLETT (Liverpool) said that he considered it safer to leave the placenta, though recovery would be tardy.

Dr. D. DOUGAL (Manchester) recalled a case of full-time ectopic pregnancy, in which the placenta was removed and the patient made a good recovery.

Dr. C. P. BRENTNALL (Manchester) described a case of abdominal pregnancy at four months.

Specimens and Cases.

Dr. BRENTNALL showed slides illustrating an endometrioma of the anterior abdominal wall in a woman of 37. The tumour was the size of a filbert and was firmly embedded in the rectus muscle. He said that he had not found any recorded instance of a growth of this kind being situated so far from the uterus. The woman had had no previous operation, and the fact that the ovaries were not adherent suggested that they had not acted as an intermediate host for the spread of the tumour over the peritoneal cavity. There was no chocolate fluid in the tumour and the umbilicus was normal.

Dr. H. LEITH MURRAY (Liverpool) showed a specimen of primary carcinoma of the appendix, emphasising the fact that such a growth might present itself as a very inconspicuous lesion.

The PRESIDENT reported a case of labour obstructed by a diverticulum of the rectum.

Prof. BLAIR BELL (Liverpool) described two cases of bilateral squamous-celled carcinoma of ovaries and peritoneum, subsequent to vaginal hysterectomy for carcinoma of the cervix, and to carcinoma of cervix treated by radium.

Dr. J. W. BRIDE (Manchester) reported two cases of malignant disease in association with genital prolapse.

Reviews and Notices of Books.

SIR JAMES MACKENZIE.

The Beloved Physician, Sir James Mackenzie. A Biography. By R. MCNAIR WILSON. London: John Murray. 1926. Pp. 316. 12*s*.

Dr. Wilson has written a readable biography of one whom he loved as a man and whose genius he admired with whole-hearted enthusiasm; and indeed Mackenzie was one who deserved to inspire these sentiments, for he was a good friend, a most helpful teacher, and one who threw a flood of light upon the dark places.

James Mackenzie, like many of his famous compatriots, came of good Highland farming stock. He was born at Scone and educated first at the Perth Academy, where he wondered, as many at other schools have done, why his teachers set so much value on memory and so little on reason. He left school at the age of 15, when his boyish fancy was one day attracted by the coloured jars in a chemist's window and he determined to become a chemist. Accordingly he was apprenticed. When, however, he came to work he was as much disillusioned with the duties and with the gorgeous coloured jars as was the well-known Rosamond of Miss Edgeworth, and at the end of his apprenticeship he entered Edinburgh University as medical student. Soon after qualifying he became assistant in the firm of two medical men in Burnley, Dr. William Briggs and Dr. John Brown. This was in 1879, and in the course of his practice he met with the case which was to determine his life's work. It was that of a young woman who died from heart failure during labour, and Mackenzie asked himself whether, if he had had a wider knowledge of heart affections, he could have foreseen and possibly averted the tragedy. So he took hundreds of tracings with a Dudgeon sphygmograph, and also others of the venous pulse in the neck with a filament of straw stuck to the vein writing on smoked paper, which crude device was followed in time by an ingenious polygraph devised by himself. Years of study convinced him that every murmur of the heart was not necessarily a sign of disease, but that a heart in which a murmur was present could do its work perfectly well so long as it was not over-driven. The outcome of all these researches was, as every medical man knows, the discovery of the conditions known as auricular fibrillation and heart-block.

Of the coming of the Burnley practitioner to London, of his welcome by the College of Physicians and the Royal Society, of his success and honours, an account must be sought in Dr. Wilson's pages. Here also will be found the reasons for Mackenzie's dramatic resolve, when at the height of his fame, to give up London and go to St. Andrews, there to devote the rest of his life to clinical research on the early symptoms of disease. The building in which the research was carried on was called the St. Andrews Institute of Clinical Research, now known as the James Mackenzie Institute, and remains alike as a memorial to his name and as a seat for the investigations which the broad philosophy of his outlook made him feel to be imperative. Despite all the stress laid upon family and personal history, both in institutional teaching and in private note-books, since clinical medicine began to be systematised some hundred years or more ago, the fact remains that the beginnings of disease processes did not receive until recently proportional attention. In Mackenzie's conception of an Institute devoted to clinical investigation we see a formulation of the fundamental truth on which he insisted that medicine is a special branch of science dealing with a special group of phenomena, where the clinical investigator must apply the methods which are specially suitable for his purposes. It was essential to this conception that the knowledge derived, mainly from general practice, by the watching of ill-health over a long course of years should be categorised and tested, and along the lines thus suggested

the work at St. Andrews is now proceeding. It is one of the ironies of fate that soon after he went to St. Andrews Mackenzie knew for a fact that he was stricken with angina pectoris, and from this disease he died on Jan. 25th, 1925.

A book which will interest not the medical man alone, but also any intelligent layman. It is clearly and often eloquently written, and good reasons are given for the striking title.

LA GRIPPE.

By Dr. PIERRE LEREBOULLET, Professeur agrégé à la Faculté de Médecine de Paris, Médecin de l'Hôpital des Enfants Malades. Paris: Baillière et Fils. 1926. Pp. 144. Fr.8.

MOST of the books dealing with influenza are either treatises on Pfeiffer's bacillus or discussions of that medley of infections to which the layman has given this name. Dr. Lereboullet's modest little volume is a refreshing clinical and pathological study. Pandemic influenza attacks the world with such extreme violence and at such rare intervals that a new generation of medical practitioners is overwhelmed at a time when their experienced predecessors are unable to help them. Between pandemics it is next to impossible to obtain first-hand knowledge, and therefore we heartily commend to medical students this excellent account of a dreadful disease.

EPILEPSY.

A Functional Mental Illness. By R. G. ROWS, M.D. Lond., Pathologist and Medical Officer, County Mental Hospital, Prestwich, Manchester; and W. E. BOND, M.R.C.S. Eng., L.R.C.P. Lond., a senior medical officer to the Ministry of Pensions. London: H. K. Lewis. 1926. Pp. 138. 8*s*.

THAT older views on the nature of epilepsy have been to some extent modified by war experiences is doubtless now a truism; it can scarcely be questioned, at any rate, that types of epileptic phenomena then occurred with no little frequency which were much less often encountered in ordinary civilian practice. Yet it would be erroneous to suggest that fits in which a psychogenic factor was conspicuous had up to the time of the war been unknown; on the contrary, the variety was fully recognised, if somewhat neglected. In a large proportion of war cases of epilepsy so obvious seemed the underlying psychological mechanism that it was only natural that attempts should be made to unify all epileptic phenomena on that basis and to find in each and every manifestation of the condition the action of a mental agent. The late Dr. R. G. Rows has left on record his conclusions, based on abundant war material, and his formulations are given in the book without anything having been altered by his collaborator.

Briefly, it is Dr. Rows's aim to demonstrate that epilepsy is one and indivisible, and that behind its simplest no less than its most complex exteriorisation lies the action of a mental factor. This factor is a disturbance of consciousness associated with an emotional state; "in every instance" this emotional state can be detected, and the phenomena of the fit are a reaction to express the emotion. This contention is declared to be substantiated by a consideration of the "meaning" of the movements in convulsions, and an attempt is made to support the argument on physiological grounds—viz., that the vasomotor-sympathetic system is implicated in fits and that its relation to the emotional sphere is acknowledged. Holding these views the authors treat their cases by "explanation, exploration, and re-education," and categorically state that drugs "have no legitimate place in the treatment of this or any other form of mental illness," unless as a temporary measure.

While there is something to be said for the hypothesis that disorders at the mental level are often enough responsible for somatic symptoms, the universal application of it to the phenomena usually called epileptic, whatever their clinical type, raises more difficulties than it settles. The authors slur over the obvious hindrance to acceptance that resides in the commonplace variety of infantile convulsions by saying that "attention must be given to the little control over the emotions possessed by the child"; what of the new-born infant, whose cortex may discharge for hours after injury in parturition? What of Jacksonian epilepsy, which may for years be limited to one particular muscular group, as in epilepsia partialis continua? We are convinced of the applicability of the authors' conclusions to certain cases called epileptic; we are equally unable to find in them a plausible explanation of other types of the syndrome that come under the clinician's notice daily.

DIAGNOSIS.

A Manual of Normal Physical Signs. By WYNDHAM B. BLANTON, B.A., M.A., M.D., Associate in Medicine, Medical College of Virginia. London: Henry Kimpton. 1926. Pp. 215. 12*s*.

THERE is something to be said for a brief compilation of the normal results of physical examination of healthy individuals such as is presented in this book. At the same time it must not be forgotten that the step from the normal to the abnormal is an easy one, the normal percussion note in one region of the chest, for example, being abnormal when obtained elsewhere, and therefore the complete divorce of the normal from the abnormal is neither possible nor likely to be satisfactory. Dr. Blanton's idea in preparing his book, however, was to help the beginner, and for this purpose he introduces a chapter on sound and endeavours to deal with the subjects of percussion and auscultation on a physical basis. This attempt has not been very successful, and there are certain errors in his book which render its value for beginners very doubtful. The right apex is described as a normally dull thoracic area (p. 57), and inspiration in this same situation is said to be less intense as compared with the left (p. 74). The account of bronchial breathing is poor, no reference being made to the pause occurring between inspiration and expiration. Râles are classified as moist and dry, no mention being made of rhonchi (p. 79). When the circulatory system comes to be considered the third heart sound is given as prominent a position as the more usual first and second sounds (p. 116), and this is bound to confuse the young student; nor is the description of the method of obtaining the diastolic pressure lucid.

PEDIATRICS.

Diagnosis of Children's Diseases. Third (German) edition. By Prof. E. FEER, Zurich. Translated by C. A. SCHERER, M.D. London: J. B. Lippincott. 1925. Pp. 551. 35*s*.

THE third edition of Prof. Feer's work, which has achieved notable success on the continent, has now been brought within reach of the English reader by the enterprise of Dr. Scherer. The book is intended to be a guide to diagnosis, and is not concerned with systematic description or with treatment of diseases; symptoms are described and the differential diagnosis of their possible causes is discussed in detail. Prof. Feer deprecates the tendency to allow laboratory tests to supersede, instead of to follow, thorough clinical examination of the patient, and the reader will be impressed throughout the book with the paramount importance of detailed clinical observation in this branch of medicine. The illustrations are numerous and include colour-plates of the exanthemata. As a supplement to the systematic text-books this work should be of great value to students and practitioners.

Dystrophien und Durchfallskrankheiten im Säuglingsalter. By Prof. LEO LANGSTEIN. Leipzig: Georg Thieme. 1926. Pp. 207. M.14.

THE principle underlying this work is that both the dystrophies and diarrhœas of infancy can be

successfully treated by simple methods provided that an accurate estimate of the clinical and ætiological factors is obtained. The book consists of two parts, dealing respectively with dystrophies and diarrhœas. The classification and differential diagnosis of different types are presented in a concise and lucid way and accompanied by accounts of individual cases. Many of these are illustrated by photographs and charts of feeding and weight. The method of treatment which the author advocates has the great advantage of being extremely simple, consisting almost entirely in the use of human milk, buttermilk, and diluted cow's milk with added carbohydrate. It has also the practical disadvantage that a large measure of its success seems to depend upon the use of expressed human milk, which is not accessible to those who work under less ideal conditions. Much emphasis is laid on the dangers of dehydration and the importance of combating it; curiously little is said about the use of intraperitoneal infusions in accomplishing this end. Careful attention to quantitative requirements and avoidance of overfeeding occupy a prominent place in the author's régime. Prof. Langstein is impressed with the extent to which practitioners are deterred from scientific treatment of these disorders by the constantly changing stream of complicated methods which the literature of the subject presents. His book was written with the object of bringing the practitioner into touch with the methods of diagnosis and treatment of infantile malnutrition which are evolved from the experience of pediatrists working in special institutions, and it may be recommended as a successful attempt to simplify a complicated subject.

DIETETICS.

What's Best to Eat? By S. HENNING BELFRAGE, M.D. Lond., M.R.C.S., L.R.C.P. With a Practical Supplement by LUCY H. YATES, M.C.A. London: William Heinemann (Medical Books), Ltd. 1926. Pp. 199. 7*s.* 6*d.*

The Importance of Diet in Relation to Health. The People's League of Health Lectures. London: George Routledge and Sons, Ltd. 1926. Pp. 130. 3*s.* 6*d.*

Food. Its Composition and Preparation. Second edition, revised. By MARY T. DOWD and JEAN D. JAMESON, Teachers of Household Science, Washington Irving School, New York. London: Chapman and Hall, Ltd. 1925. Pp. 177. 7*s.* 6*d.*

Dr. Belfrage is an ardent disciple of the "intestinal stasis" school, and his new book on dietetics therefore owes a great deal to the teaching of Sir William Arbuthnot Lane. He sets out in some detail the principles of diet, attaching great importance to the mineral salts and the vitamins contained in food. It is not easy to follow exactly how the terrible poisons alleged to be generated in intestinal stasis get into the blood stream, as it is stated they do (p. 77), for in the first place the passage of absorbed foodstuffs to the liver is described (p. 72), and secondly the detoxicating action of this organ in the case of ptomaine is carefully emphasised (p. 83). The intelligent reader may well ask what is happening to the liver when the poisons produced in intestinal stasis arrive. The answer that the liver cells get overworked and break down is a mere speculation with little or no experimental proof. Naturally the list given of diseases caused or predisposed to by intestinal stasis is a long one, and the author also appears to believe that relative deficiencies in the vitamins of food "are very common and lead eventually to very serious damage" (p. 26), a view which is not held by most dietitians. Another point calling for criticism is the sweeping recommendation of "roughage" for children "from their earliest years" (p. 75), since it has been shown, for example, by G. F. Still, that brown bread, coarse oatmeal, and the like, are frequent causes of "indigestion" and abdominal pain in children. The practical supplement of recipes and cooking is good, and it is a pity that the value of the rest of the book is impaired by too one-sided an attitude to health and disease.

The lectures delivered in 1925, under the auspices of the People's League of Health, have been published in book form. Of these lectures that by Sir D'Arcy Power on the history and geography of mankind's feeding habits is the most interesting, because it contains almost the only new material which distinguishes this book from many others published during the last few months. Hippocrates is reputed to have said that all diseases commence in the stomach, and Sir D'Arcy Power's lecture goes to show that as civilisation has advanced this dictum has become more strikingly true, although there are signs at the present day of a reaction against our somewhat gross habits of eating and drinking. The other lectures in this volume, on the general principles of diet by Dr. Leonard Hill, on vitamins by Prof. W. D. Halliburton, on infant feeding by Dr. H. Scurfield, on feeding and breeding of cattle by Dr. M. J. Rowlands, and on food preservatives by Prof. W. E. Dixon, are consistent in their high standard of intelligent and balanced argument.

The American school text-book is also characterised by its well-arranged and well-balanced material. The authors approach the subject in a scientific manner, classifying, explaining, and describing food in its raw and cooked state and dealing fully with the intermediate process. Its illustrations are excellent, but it suffers from the usual disadvantage of American books on diet in this country that many of the foodstuffs are not known; even a glossary fails to get over the difficulty of the American colloquial terms. Modern advances in dietetics are, however, well described.

JOURNALS.

JOURNAL OF INDUSTRIAL HYGIENE. October, 1926. —Disease and the Workmen's Compensation Act is dealt with in the opening paper by Sir K. W. Goadby, a specialist medical referee. After describing the procedure of the Act, he points out that compensation in 1924 cost industry double what it did in 1911. The cost per person in the mining industry in 1924 was 56*s.* 2*d.* as compared with 8*s.* 7*d.* for factory operatives. Coal-miners accounted for over 90 per cent. of all claims; the claims for one disease alone, nystagmus, peculiar to them, being equal to all other claims for occupational diseases taken together. Claims for dermatitis increased from 270 cases in 1919 to 709 in 1924. Incapacity for compensated disease is shown to be much greater than for compensated accidents.—Three articles follow by E. L. Middleton, dealing with three matters concerned with the cotton industry. The first is weavers' cough, a trouble which breaks out in epidemic form from time to time in certain mills, and appears to be associated with the occurrence of mildew upon the cotton threads. The disease is carefully described and case-histories are given. The exact mould which causes trouble has not been isolated, nor have means yet been devised for abolishing moulds from weaving sheds. The second subject is that of dust in cotton-card rooms. This dust is known to cause a characteristic form of spasmodic asthma after years of exposure. Details are given of samples of dust collected under varying circumstances. The constituent of the dust at fault has not yet been determined. Further investigation is required. Meanwhile all dust generated in the early processes of opening and carding cotton should be carefully prevented from gaining access to the workrooms. The third article deals with the presence of mineral oils in the atmosphere of cotton-spinning rooms. The occurrence of mule-spinners' cancer, which is ascribed to oil on the spinners' clothes, adds interest to this investigation. Samples of air were taken in various positions in spinning-rooms and fine droplets of oil were found to be present. Herein may be a possible explanation of the access of oil to parts of the skin not exposed to oily surfaces, such as machinery, nor in contact with saturated clothing.

THE PANEL CONFERENCE.

DISCIPLINARY POWERS OF MINISTRY OF HEALTH.

THE annual Conference of representatives of local medical and panel committees was held on Oct. 21st in the Great Hall of the British Medical Association, under the presidency of Dr. E. K. LE FLEMING (Dorset). The Conference considered the report of the Insurance Acts Committee (I.A.C.), and devoted much time to discussing the right of panel practitioners to appeal from decisions by the Minister of Health.

Dr. H. G. DAIN (Birmingham), Chairman of the I.A.C., introducing the report of the Committee, said that since the last conference the Royal Commission on National Health Insurance had made its report, and the Government had founded part of their Economy Bill upon its findings. It was satisfactory that medical benefit was recognised as being a first charge, but as there were increasing demands for sickness benefit it was uncertain whether there would be enough money to meet the ordinary claims without encroaching on the funds available for additional benefit. There was reason to suppose that practitioners were not being as careful as formerly in issuing certificates of sickness, and the situation was causing much anxiety to the Ministry of Health. The Committee had, therefore, asked Sir Walter Kinnear, of the Minister's staff, to lay his views before the Conference.

DISCIPLINARY PROCEDURE.

After a motion had been carried asking the I.A.C. to reconsider the representation of Wales and other areas on the Committee, with a view to adding not more than two members to the executive, the Conference proceeded to discuss a communication received on Oct. 9th from the Ministry of Health. This was a reply to a letter sent on July 5th by the I.A.C., in which the Committee expressed its dissatisfaction with the negative attitude of the Minister on the general question of disciplinary procedure and made suggestions for reform. The reply now received describes the Committee's letter (1) as a claim that the Minister shall have no jurisdiction in questions relating to the treatment rendered by the practitioner to his patients, and (2) as a suggestion that, failing his acceptance of this claim, the Minister should consider under what conditions his jurisdiction could be limited by some right of appeal to the courts. To the first proposition the Minister answers that he cannot forgo the responsibility of considering whether reasonable skill and care have been exercised by panel practitioners. He recognises, however, that on medical issues he must necessarily be guided by professional advice, and suggests that some system might be devised by which the I.A.C. should nominate a small panel of practitioners whose advice would be sought in particular cases. If this suggestion be accepted, he proposes that the I.A.C. should consider at what times and in what circumstances such advice should be sought. The alternative proposal, to allow an appeal to the courts, does not meet with the Minister's approval. Such an appeal, he considers, would be inconsistent with constitutional practice, since, as the Royal Commission pointed out (paragraph 444), the proposal "involves placing upon the courts of law the responsibility for deciding questions of a kind which can be more appropriately decided by a Minister who is answerable to Parliament for the manner in which he exercises his discretion." The letter contains the statement that, "with every desire to give the profession all reasonable safeguards, the Minister is unable to accept any of the proposals which have been put forward on these lines."

This reply from the Ministry having been received by the Conference, Dr. DAIN said that the proposed insertion of a professional tribunal somewhere in the machinery would undoubtedly be a step towards improvement. The Conference accepted his suggestion that the offer should be referred for consideration to the I.A.C., who should discuss its terms with the Minister and report to the Conference at a later date.

Dr. H. B. BRACKENBURY (Middlesex) pointed out that it might well be worth while to hold a special session to consider so important a proposal.

The Right of Appeal to the Courts.

After approving a motion by Kent that "the Royal Commission should have called for such further evidence as it required to substantiate or refute professional assertions in connexion with the abuses of the disciplinary machinery, such evidence having been specifically offered it," the Conference proceeded to consider a motion by Cheshire as follows:—

"That there should be an appeal to the High Court from decisions of the Minister, not only on grounds of procedure, but on the merits of the case."

Dr. L. J. PICTON, the proposer, remarked that this same motion had been laid before every conference for many years. At first it had aroused little interest, but as time went on there had been a series of cases in which decisions seemed to have been made without common sense or common justice, and the movement to demand an appeal had gained ground. Last year, indeed, the motion would doubtless have been carried but for opposition based on the ground that the whole position was under review by the Royal Commission. Dr. Picton described a recent case in which a patient brought an action for damages before the civil courts whilst the charges against the practitioner were still before the Ministry. Although a decision was overdue, the Minister had refused to give it whilst the civil action was sub judice. From this it was clear, said Dr. Picton, that the right of practitioners to appeal to the courts would be a salutary check on the working of the Ministerial machinery, and it was only just, moreover, that doctors should have the same right of appeal as their patients. It was absurd to say that this would open new floodgates of litigation, for the gates were already open to insured persons. It was the right of every citizen to appeal to the courts of the land, and it was no argument to say that medical matters were too technical for lay judgment, since many other equally technical subjects were dealt with by laymen. As Mr. Forster had pointed out in 1911 in the House of Commons, the loss of a doctor's livelihood was too serious a matter to be left in the hands of Government officials.

Dr. GORDON WARD (Kent) said that the Minister's attempt to discredit appeals to the courts showed that he was afraid of them. As a writer in THE LANCET had pointed out in 1923, nurses, midwives, and dentists had the right of appeal to the High Court; it was nonsense to say that a medical appeal would be unconstitutional.

A representative speaking both as barrister and panel practitioner, did not agree that the floodgates of litigation were already open. In the case quoted by Dr. Picton, he said, the patient had not appealed against a decision of the Ministry, but had merely taken action in law. His own experience of courts of inquiry was that nothing could be fairer, and that every effort was made to find extenuating circumstances for the medical man.

Dr. A. FOSTER (Worcester) opposed the motion because appeal to the courts was unconstitutional, and would mean long delay and expense. It was contrary, he said, to legal precedent to make an appeal from a Government Department to the High Courts, and doctors would not be the gainers if they had the additional worry of defending these actions. The Ministry, however, had tried to do what the courts had never attempted—it had tried to define "reasonable care." In this it had failed.

Dr. H. ROSE (Bucks) said that in his experience the Ministry was most fair in its treatment of doctors.

Dr. H. S. BEADLES (Essex) complained that the Ministry did not always take the advice of the courts

of inquiry; this was the reason why an appeal from the Minister's decision was necessary.

Dr. J. HOLMES (Bury) advocated support for the Insurance Acts Committee in demanding an appeal.

Dr. C. J. PALMER (Notts) hoped that there would be no appeal to the courts, since an appeal must involve undue publicity for the doctor and unnecessary expense. He gave illustrations of the inability of lay courts to understand medical matters.

Dr. G. C. GARRATT (West Sussex) said that the courts of inquiry were certainly judicial, and he saw no reason for a right to appeal against their decisions. In one case, however, in which a court of inquiry had found for a doctor and granted him costs, the Ministry had overthrown the court's decision and fined the doctor £20. Dr. Garratt gave three instances in which, he said, the Ministry's decision had been anything but fair, and had been contrary to the local recommendation. It was regrettable that the Ministry did not pay attention to the particular local conditions under which practitioners worked. It had never been the intention of Parliament, he maintained, that the present powers of the Minister of Health should be invested in one man; they had been given to a body, now swept away, on which panel practitioners were represented. It had been suggested that the right of appeal would involve much waste of time and money. This was quite true. But surely this would be a safeguard against common resort to appeals. There was already an appeal from the Minister's decisions on the ground of their illegality; why should there not be an appeal on grounds of injustice?

Dr. BRACKENBURY said that the Conference was discussing a specific remedy for the abuses of the present system. That remedy, it was suggested, should be a universal right to appeal. If the Conference were to pass a motion calling for such a right it would be tying the hands of the Insurance Acts Committee, which would have to demand a right of appeal in every case. Everyone would agree that there should be such a right in certain defined types of cases, but if a general right existed it would not be the monopoly of practitioners. Patients and approved societies would receive equal privileges, and he did not want to see them appealing to the courts in cases where the Ministry's decision had been given in favour of the doctor.

Dr. DAIN said that all the profession wanted was machinery that would provide for perfect justice. If such machinery could be devised in any other way, no one would want to go to the High Courts simply for the sport of it. He believed it not impossible to secure such internal arrangements as would be satisfactory.

Dr. D. F. TODD (Sunderland) complained that the demand for an appeal was put off year after year; it was now time that something should be done. Why should not the Minister be made to carry out the decisions of courts of inquiry? What was the use of holding such courts if he could override their decisions?

Dr. BRACKENBURY, seconded by Dr. PETER MACDONALD (York), then proposed, as an amendment to the motion:

> That in the opinion of this Conference there should be an appeal to the courts on grounds of (1) illegal, irregular procedure; (2) alleged vindictive penalties; and (3) where common law action by the patient would normally lie; and that the question of appeals in other cases be referred to the Insurance Acts Committee for consultation with the Ministry.

Dr. PICTON, opposing this amendment, said that his original motion was a useful expression of opinion. The Conference should tell the Insurance Acts Committee what it really thought. The amendment was, however, carried by 90 votes to 30 and was then carried as the substantive motion.

On behalf of the I.A.C. Dr. DAIN then proposed:—

> That this Conference regards as serious the situation which arises in consequence of the negative replies of the Ministry of Health in connexion with the methods and machinery for dealing with complaints against insurance practitioners; and pledges itself to support proposals (*a*) to secure equal justice for practitioners as for insured persons and approved societies; (*b*) to secure improved methods for dealing with complaints of minor importance; and (*c*) to organise a most strenuous resistance to any claims of the Ministry of Health or of Insurance Committees to judge as to the propriety of the treatment adopted by a practitioner in attending his patient or the relative degree of care and skill shown by a practitioner in such attendance as compared with that of other registered medical practitioners.

Discussion arose only on part (*c*) of this motion. Dr. GORDON WARD opposed it because, he said, no Government Department could possibly bind itself to take no interest in a particular sphere of the work for which it was responsible. The Ministry, moreover, had already turned down the proposal.

Dr. J. S. MANSON (Warrington) hoped that the motion would be referred back to the I.A.C. The organisation of strenuous resistance to the Ministry's claim to discipline careless practitioners might make the public say that the British Medical Association was trying to shield incompetence.

Dr. H. J. CARDALE (London) wanted the words "care and" deleted from the motion, whilst Dr. BRACKENBURY hoped that it would be passed exactly as it stood, since in this form it had been approved by the representative meeting of the B.M.A., and it would be a pity to make verbal changes where there was no fundamental difference of opinion. Nothing short of a drastic letter, he said, would draw a reply from the Ministry.

Dr. DAIN said that it was necessary to be quite definite on this question. When a practitioner undertook an insurance contract he undertook, as a matter of course, to give his patients the benefit of "ordinary skill"; he did not for a moment suppose that his actions would come up for judgment by the Minister or his officers who would make decisions about them on the strength of a written report. It was intolerable, Dr. Dain thought, that the Minister should be able to pick out some part of the story—perhaps a part not much discussed by the Court of Inquiry—and found his own judgment upon it.

The motion was carried by a large majority.

Evidence of Character and Previous Conduct.

On a motion by the I.A.C., recommending the Conference to accept the proposals of the Ministry as to the hearing of evidence of character and previous conduct, Dr. DAIN said that these proposals were in keeping with ordinary legal procedure. Courts of inquiry sat to hear a particular charge brought against a doctor. The presiding barristers ruled that it was impossible to receive evidence not directly bearing on the case and therefore refused to hear evidence of character from the doctor's friends. Similarly they would not take evidence against the doctor submitted by the patient or approved society. The I.A.C. agreed, however, that after a decision on the facts had been reached it was proper for the judge to hear evidence of character and previous behaviour before he passed sentence.

Dr. GORDON WARD said that in an inquiry *all* the evidence should be heard. Everything must be above board. Inquiry committees should be allowed to report on the inference of the facts—that is, whether the doctor was guilty or not. To this Dr. DAIN replied that it was not relevant to hear evidence of character in deciding on the truth of a specific charge. It would be a mistake not to adhere to the legal precedent.

The Conference, by a very large majority, agreed to accept the Ministry's proposals.

Increased Claims for Sickness Benefit.

Sir WALTER KINNEAR (Ministry of Health) then addressed the Conference on the increase of claims for sickness benefit and the financial position of the approved societies. He asked that no report of his statements should be published. The Conference warmly thanked Sir Walter Kinnear for his clear statement of the facts, and at the afternoon session passed a resolution asking the I.A.C. to consider

what practical steps could be taken to meet the difficulties which he had raised, and requesting representatives of local medical and panel committees to use their influence along the lines he had suggested.

Dr. M. W. RENTON (Kent) proposed a motion welcoming the finding of the Minority Report of the Royal Commission that "the approved society system is a hindrance to the development of a complete public health policy," but the Conference decided to pass on to the next business, as the time was held inappropriate for discussing the many issues which the motion might raise.

Maternity Benefit.

The following resolution, also by Kent, was then discussed :—

That this Conference welcomes the finding of the Royal Commission that "the service element (of maternity benefit) should be administered by the local health authorities and be coördinated with the other local medical services," understanding that this implies that maternity services will not be within the scope of the contract of medical service under the Insurance Acts.

Dr. BRACKENBURY, opposing, said that he trusted that the time would never come when maternity work would be taken out of the sphere of the family or insurance practitioner.

Dr. E. A. GREGG said that the Conference would be very unwise to give an impression that it thought that maternity work should be put into the hands of local health authorities. It should be remembered that the panel doctor was only an insurance practitioner in one aspect of his work.

Dr. GORDON WARD said that, no matter what the Conference did or said, the machinery provided by local authorities for carrying on maternity work was bound to expand and increase. He would, of course, oppose any suggestion that the midwifery of an area should be the monopoly of a single specialist, but he thought that panel practitioners would do well to make use of the local authorities' services rather than the cumbersome machinery of the Insurance Acts.

The motion was lost.

Keeping of Records.

On a motion by the I.A.C. to approve the proposed machinery for dealing with cases of alleged failure to keep proper medical records, Dr. DAIN said that the Committee had not objected to the Minister fining practitioners where the facts were not in dispute, but it did object to medical records going before any committees on which laymen sat, such as the medical service subcommittees. The Minister had been in the habit of sending down a medical officer to investigate complaints, and it had now been arranged that two doctors, representing the local panel committee and a neighbouring panel committee, should sit with this officer and be empowered to send to the Minister their comments on the case.

Dr. GORDON WARD pointed out that a fine of £50 was sometimes inflicted in these cases. They were too important for hole-and-corner methods. Why should not a barrister sit on the Inquiry Committee? To this Dr. DAIN replied that courts of inquiry were only used when a claim was made that a practitioner should be taken off the panel. The new proposals were the first suggestion that anyone besides the medical officer from the Ministry should hear these cases.

The Conference, by approving the I.A.C.'s motion, accepted the new proposals. The two following motions, proposed respectively by the I.A.C. and Hastings, were also carried :—

That the Conference reiterates the opinion previously expressed on the subject of medical records—namely, that the value of careful clinical notes and essential dates on medical records is fully appreciated, but that it is unnecessary to record all attendances, &c. (except where practitioners have agreed to keep full records of work done for statistical purposes). The Conference desires to point out to the Minister of Health that the experience gained of the working of the recommendation of the Inter-Departmental Committee on Medical Records of 1920, on which the present record is based, has caused some of the medical members of that Committee to alter their views on this subject.

That this Conference draws the attention of practitioners to the inconvenience caused by neglect to forward record cards of persons transferred from one practitioner to another, and requests that they shall be sent on as soon as possible after the removal from the list.

Production of Medical Cards by Patients.

An interesting discussion arose on a motion by the I.A.C. to approve the principle that a practitioner is not entitled to demand the production of a medical card, or, alternatively, the payment of a fee, as a condition of providing treatment for an insured person already on his list, unless he has reasonable grounds for doubting the patient's identity. Among those who spoke on this motion was Dr. CARDALE, who held that it would be very unwise to sap the rule that a practitioner was always entitled to demand a card. Certainly it was not necessary to take the fee where a card could not be produced, but the claim for a fee was a valuable lever. If this lever were given away patients would bring their cards or not, just as they liked.

The I.A.C.'s motion was, however, passed.

On a proposal by Hastings that the I.A.C. should press for the abolition of Clause 7 (para. 3) in the Terms of Service, Dr. A. E. LARKING wittily described the difficulties of panel practitioners at health resorts. To Hastings, he said, came large numbers of highly-dressed ladies and gentlemen. When they came to see a doctor he naturally did not like to ask if they were panel patients, and often attended and prescribed for them for some time in blissful ignorance of their true status. It was most unfair of these people to come and pose as private patients, thinking—though most unjustly, of course—that they would get better treatment. The medical practitioners of Hastings thought it only right that their patients, if insured, should disclose the fact.

Dr. A. W. HOLTHUSEN (Southend) supported Dr. Larking's plea by telling a story in which a woman and her friends had deliberately masqueraded as private patients and then had asked for a refund of fees which they had paid.

Dr. BRACKENBURY opposed the motion on the ground that the clause complained of had been put in so that such cases—often cases of bona fide mistakes by doctors—should not always have to go before medical service subcommittees.

The motion by Hastings was not agreed to.

Complaints against Officials of Approved Societies.

Dr. W. COOK (Warwickshire) described how he had been forced (out of charity) to visit a patient a mile away in order to give her a certificate of sickness, because she had been told by the agent of her approved society that if she stirred a foot outside her own district she would forfeit her sick pay.

The Conference passed the following resolution :—

That the Insurance Acts Committee be instructed to press for power being given to the Medical Service Subcommittee or other approved body to investigate complaints made by insured persons, insurance practitioners, or panel committees against approved society officials who alter or in any way falsify medical certificates, or otherwise interfere with practitioners in the performance of their duties.

Remuneration.

A motion by the I.A.C. "that the question of the amount of the capitation fee for 1927 for the treatment of insured persons be not raised on behalf of insurance practitioners" was approved by the Conference. In proposing an amendment by Kent, that any decision as to stabilisation or revision of the capitation fee should be preceded by an inquiry by the profession into the market value of the panel practitioner's services, Dr. GORDON WARD said that the present remuneration was based on the original fee which had merely been modified according to the cost of living and other factors. The capitation fee for panel patients ought, however, to be calculated from the cost of similar services to private patients of the same class. In Kent this would justify a capitation fee of 12*s.* or 13*s.*

Dr. BRACKENBURY did not agree that the present capitation fee was based on the original figure. It was quite unnecessary, he thought, to hold an investigation into the "market value" of the doctor's services—a term whose use he deprecated—since whenever the proper value of the capitation fee was being calculated the fees charged to private patients must inevitably be taken into consideration.

Dr. J. W. BONE (Luton) thought that it was impossible to stabilise the capitation fee. An estimate from charges in Kent might show that the fee should be higher than it was, but in poorer counties the result would be otherwise. Dr. Bone personally was content that his remuneration should be at the present capitation rate and feared that revision might make it lower rather than higher, for this was an unsuitable time to suggest a change.

The amendment by Kent was lost.

Dental and Ophthalmic Benefit.

Dr. F. W. COAKER (Worcestershire) proposed a motion urging the I.A.C. (1) to approach the Ministry with a view to steps being taken towards making dental and ophthalmic treatment statutory benefits, and (2) to make arrangements with the Ministry so as to make it permissible for any insurance practitioner to state on the written recommendation for specialist treatment the name of the specialist he advised his patient to consult.

Dr. C. M. STEVENSON (Cambridgeshire) complained that some of the approved societies were sending all their patients to one ophthalmic specialist, and sometimes refusing to pay the fees of specialists whom the patient himself had chosen. He could not, however, support the second part of the motion because he thought that the choice of an ophthalmic surgeon should rest with the insured person; the panel doctor had done enough when he had given a verbal recommendation.

Dr. H. W. POOLER (Derbyshire) said that the trouble was that approved societies were recommending opticians instead of ophthalmic surgeons. One society had written from Manchester to a patient of his, saying that their own optician did not go so far as the patient's neighbourhood, and that they would be glad if he would call on any local optician who could prescribe glasses.

After some further discussion Dr. DAIN pointed out that dental and ophthalmic benefits were surplus benefits; the societies had a perfect right to arrange for themselves how they should spend the money, and the Ministry had no power to dictate to them. It would therefore be futile to pass the Worcestershire motion. Apart from this, if every panel doctor was to make a practice of sending to ophthalmic surgeons all patients who required examination of the eyes the money available for ophthalmic benefit during the next five years would all be spent in 12 months. The increase of ordinary sickness claims made it probable in any case that there would soon be no funds left for ophthalmic benefit, and the problem was thus likely to solve itself shortly. He saw no objection to practitioners putting down the name of a specialist on their recommendations.

Dr. Coaker's motion was lost.

Speaking on a further motion by Hastings, approving the principle that wherever the practitioner considered further advice necessary the patient should in the first place be referred to an ophthalmic surgeon and not an optician, Dr. LARKING pointed out that the panel doctor's certificate might take various forms. He might recommend a visit to an optician for glasses or to a surgeon for further investigation. To send all cases to a specialist, he thought, would defeat its own ends. Societies should not have had placed on them the duty to decide. It was sometimes suggested that the practitioner should give some idea on the certificate of what was wrong with the patient, so as to aid them in their decision; but to do this would be to give away the right to send all patients to the ophthalmic surgeon.

Dr. G. A. RORIE proposed an amendment by Dundee suggesting that cases in which the practitioner was satisfied that only spectacle-fitting was required should be excepted from the B.M.A.'s recommendation. This amendment was lost by 47 votes to 52.

Dr. ALFRED COX (B.M.A.) said that he wished that it could be realised how muddled the position was becoming. They would soon have to make up their mind whether general practitioners should discriminate between those cases which required diagnosis and treatment by an ophthalmic specialist and those which did not, or whether all cases in which the eyes required consideration must be sent to a specialist at once. As Dr. Dain had pointed out, there might soon be no benefit left.

The Conference then accepted a proposal by Dr. DAIN to proceed to the next business.

Further Proceedings.

On a motion by Kent asking the I.A.C. to secure statistics on certain special services included in the capitation fee payment, Dr. G. C. ANDERSON gave an account of the B.M.A.'s work in collecting figures from panel and non-panel practitioners.

Dr. J. P. WILLIAMS-FREEMAN (Andover) and Dr. H. R. BROWN (Essex) contributed to a discussion, on the cost of prescribing, which led to a motion being passed accepting the Ministry's offer to increase the 2*s.* capitation grant to 2*s.* 3*d.* as the best at present obtainable.

Several proposals dealing with the method by which an insured person changes his doctor were referred back to the I.A.C., and a resolution was passed "that insurance practitioners should not be expected to provide sickness certificates, prescriptions, or medicine for tuberculous patients who are in regular attendance and in receipt of treatment at the tuberculosis dispensary."

Dr. J. MCCREA (Berkshire) proposed:—

That in the opinion of this Conference, approved society officials should not have the power to refuse sickness benefit on medical grounds alone, to any insured person, who has been certified as incapable of work by a doctor on the panel, unless he/she has been reported fit for work by the regional medical officer; and that the Insurance Acts Committee be instructed to take immediate action to enforce this reform.

This motion was passed in spite of a protest by Dr. DAIN, who said that it was quite impossible to compel the societies to accept a doctor's certificate, though patients could appeal if the certificate was refused. The I.A.C. would find itself unable to act in the matter.

Dr. R. FORBES (Gateshead) raised the question of the appointment of medical referees by approved societies.

Dr. BONE proposed that the I.A.C. should undertake an investigation of drugs for the new British Pharmacopœia from the point of view of insurance practice, and this suggestion was endorsed by the Conference.

Amongst other motions proposed and carried at the Conference were the following:—

That there be no relaxation of effort in the matter of obtaining contributions for the National Insurance Defence Trust until that Trust has reached the total of £250,000.

That the Conference approves of the proposal that Insurance Committees should notify parties in cases heard before the Service Subcommittee of their right of appeal and of the power of the Minister to award costs as he may think fit.

That the Conference agrees to the proposal that the notice issued to insured persons on the list of a deceased or retiring practitioner, informing them of their right to a fresh choice, shall intimate that they would be deemed to have consented to their names being transferred to the successor's list unless within one month of receiving such notice they gave notice of objection to such transference.

That this Conference is of opinion that the existing arrangement whereby that portion of insured seamen who, as members of the Seamen's National Insurance Society, obtain their medical benefit through the society, should be discontinued, and that all insured seamen should obtain their medical benefit in the ordinary manner through Insurance Committees.

Dr. E. K. LE FLEMING was unanimously re-elected Chairman of the Conference for the ensuing year, and the proceedings ended at about 6.30 P.M.

THE LANCET.

LONDON: SATURDAY, OCTOBER 30, 1926.

THE RIGHT OF APPEAL.

YEAR after year the panel doctors have been demanding the right to appeal (preferably to the law-courts) from the disciplinary decisions promulgated by the Ministry of Health under the National Health Insurance Medical Benefit Regulations. Their persistence has had a twofold origin. In the first place they have been conscious of specific grievances—ministerial decisions seemingly at variance with the findings of local inquiries, a somewhat arbitrary infliction of lesser penalties when the full penalty of removal from the medical list has not been imposed, the withholding of costs from doctors against whom complaints have failed, and other matters to which attention has been drawn from time to time. In the second place they have been unable to forget that in this country every citizen enjoys an unfettered right of access to courts of justice, and they have resented the apparent diminution of that right in the contractual relationship which governs their service under the National Health Insurance Acts. As a result of recent discussions the position of the panel doctor has been improved and the atmosphere cleared. He may be congratulated on having obtained valuable concessions. The Ministry of Health has consented to allow him the opportunity of a further hearing before any lesser penalty than removal from the medical list is inflicted.

Thus a doctor summoned to meet definite allegations on the issue whether his name is to be removed or not, and who has succeeded upon that issue, is not to be punished upon other issues without a proper chance to make his defence. Secondly, the Ministry has expressed—though rather cautiously—its willingness to consider evidence of the previous good character and professional reputation of a practitioner. Thirdly, the Ministry has recognised that, in considering whether reasonable skill and care have been exercised, the question necessarily involves medical issues on which the guidance of professional advice is required. The Minister is prepared to accept nominations by the Insurance Acts Committee of a small panel of practitioners from which could be selected those whose advice might be sought in particular cases. This offer, on the unanimous approval by the Panel Conference (reported at length on p. 909 of our present issue) of a motion by Dr. H. G. DAIN to that effect, has been referred to the Committee for discussion with the Ministry. The Ministry has hitherto shown itself disinclined to enlarge its recourse to a professional tribunal on points of professional practice—an attitude in contrast to that of the Home Office which has recently had sufficient confidence in the medical profession to entrust its representatives with a remarkable measure of criminal jurisdiction under the Dangerous Drugs Acts. As Dr. DAIN observes, the Ministry's offer to insert a professional tribunal somewhere in the machinery of health insurance is a step in the right direction, but it is not yet clear at what point the tribunal will be inserted. These concessions will do much to meet the demand for a right of appeal to the law-courts, though we have yet to see them in operation. We must not be thought ungrateful for them if we suggest that the Ministry would remove a great source of grievance if it would limit its disciplinary decisions to the sole question whether a panel doctor is or is not fit to be upon the medical list. When exercising its own disciplinary jurisdiction the General Medical Council confines itself to the single issue whether a registered medical practitioner is or is not fit to be upon the Register. The feeling is growing that it would better accord with the traditions and dignity of the profession if the Ministry worked upon the same basis and eschewed the imposition of lesser penalties.

Upon the general question of the right to appeal to the law-courts it is wise not to confuse two very different matters. The possible appeal from a disciplinary decision of the Minister under the health insurance system is something quite distinct from the possible appeal against a disciplinary decision of the General Medical Council. As we have on other occasions observed, the members of various professions—nurses, midwives, dentists, and veterinary surgeons—have a statutory right of appeal to the High Court or the Privy Council against the removal of their names from the professional register; medical practitioners have no such statutory right. But this disability of doctors to appeal against a disciplinary tribunal composed of members of their own profession has an aspect very different from the disability to appeal against the disciplinary decision of a Government department. It may fairly be said that the doctor's sense of exclusion from the law-courts in the one case makes him more conscious of exclusion in the other; but no useful purpose is served by confusing the two disabilities. Nor should too much stress be laid, we consider, on the grievance that a panel patient, in addition to the right of complaint under the Medical Benefit Regulations, has access also to the law-courts to obtain damages for alleged negligence on the part of the panel doctor. The patient has a right to enforce in the courts the supposed duties of the panel doctor. There are no converse duties on the part of the panel patient which the doctor needs to enforce. The legal position is thus in this respect not so one-sided as it might at first appear. When these considerations have been eliminated there remains to say that the Ministry of Health will more readily reach the successful solution of present difficulties by avoiding emphasis on doubtful arguments of its own. It is no final answer to say that a proposed reform will involve fresh legislation. That is what Parliament is for. Nor is it conclusive to suggest that the right of appeal for which panel doctors are pressing will involve expensive and cumbrous proceedings. The ordinary litigant does not find it either a cheap or a precipitate process to take his grievance from the lowest courts up to the House of Lords; yet nobody suggests that his right of appeal should therefore disappear. The Ministry must not make too much either of its suggestion that the British constitution forbids an appeal to the law-courts from the decision of a department, or of its hint that the panel doctor must not take his troubles to a judge because these are matters of high policy fit only for the Government or Parliament to handle. Distinguished judges have commented adversely upon the growing tendency of departments and officials to claim to act without appeal to a court of law, and sound constitutional doctrine teaches that the amalgamation of judicial and executive functions is a grave political danger.

CLINICS FOR RHEUMATISM.

THE immense amount of industrial disability produced by rheumatism is only just beginning to attract the attention that it deserves. Attempts have lately been made to interest both employers and trades unionists in the magnitude of the problem; the friendly societies have already shown their concern, whilst early in the present week Mr. SPEDAN LEWIS, a big employer of labour in London, presided at a meeting promoted by the Citizens' Council of the Federation of Medical and Allied Services, at which Sir THOMAS HORDER opened a discussion on rheumatism in industry. Recent inquiry in the insurance medical service has shown that 370,000 insured patients annually seek medical advice on account of rheumatism; that two million pounds are given to these patients for subsistence (not for treatment), and that three million weeks of work are thus forfeited each year. The spa hospitals have 681 beds between them and treat about 8600 patients in the year. Outside these hospitals there is no adequate treatment for insured persons suffering from rheumatic disease, for, as Dr. M. B. RAY states in a paper printed in the present issue of THE LANCET, the treatment available at hospital out-patient departments is usually not of the kind likely to prove most beneficial. In this we might learn a lesson from one of our nearest neighbours. Reviewing the measures taken in Northern Europe for the treatment of industrial rheumatism, Dr. RAY refers to Dr. J. VAN BREEMEN'S clinic at Amsterdam, which has just been visited by representatives of the Ministry of Health, where about 1000 patients are dealt with every year and various kinds of physical treatment are given with no little success. Dr. RAY describes the suggestions of an English subcommittee of the International Society of Medical Hydrology. Their scheme provides in the first place for the proper selection at distributing centres of cases for special treatment. At the present time it is the advanced cases, for whom little can be done, which are chiefly to be found at spa hospitals, while the less advanced and more hopeful cases frequent the surgeries of insurance practitioners at stated intervals simply in order to obtain the renewal of their certificates of disability. Unfortunately, the more obvious and permanent the disability the better the chance of securing admission to a spa hospital. Their second aim is the further investigation of rheumatism as a pathological condition into whose causation a great many factors may enter. And in the third place the committee aims at setting up further centres for the actual treatment of rheumatic conditions; these are to take the form of clinics for physical and other therapy in large towns, the possibility of attaching wards to these clinics being borne in mind.

It will be generally agreed that the present lack of treatment of chronic rheumatism is a drain on the industry and resources of the country; industries, friendly societies, and the Government would all serve their own interests by spending a little more money on treatment than they now spend on a subsistence dole. A recent friendly society conference has called on the Ministry of Health to sanction spa treatment as an additional benefit under the National Insurance Acts, and there is reason to suppose that their plea will be successful, though it is not so clear that there will be funds available to make it effective. Moreover, though we may agree with Sir KINGSLEY WOOD'S remark at Leamington that British spas bear comparison with any of their foreign rivals, the facilities for distributing patients to the proper centres and giving them proper treatment leave much to be desired, and if insured persons are to derive full advantage from the benefits of spa treatment, it will certainly be necessary to provide centres for diagnosis. The suggestion is that diagnosis should be done at clinics, but nowadays examination of a case of arthritis involves exhaustive investigation along bacteriological, metabolic, clinical, and other lines and is hard to carry out without keeping the patient in bed for a while. From the point of view of research into ætiology, also, the clinic would probably prove less suitable than the large hospital.

Though, however, we may question whether the out-patient clinic is the ideal unit for distributing patients and for research, there can be no doubt of its therapeutic usefulness; it is clear enough that an immense amount of industrial disability (and of suffering) could be saved by palliative treatment given on a large scale at clinics all over the country, in a way that it is not given at the present time. It may be that at some hospitals the physical treatment departments are providing the best that can be had, but there are not enough of them, they are not properly supported, and do not receive the right patients at the right time. The need is rather for reorganisation of existing facilities than for a new departure likely to alter medical methods or bring valuable scientific information. But in view of the seriousness of rheumatism this reorganisation is exceedingly important. The problem of chronic arthritis in adults cannot be tackled by the individual practitioner; it is not being tackled by the hospitals, and it seems that it could be tackled by clinics. The specialist clinic is a necessary development of insurance practice and, as the Dawson Report pointed out, it is by clinics that much of the medical work of the future will have to be carried on. Rheumatic disability in its milder forms seems particularly fitted for treatment at this type of institution; suitably organised such treatment might be given to patients without preventing them from carrying on with some at least of their work. Local treatment (e.g., radiant heat) and advice about diet and clothing may be enough to convert the discouraged certificate-holder who loafs at home into a patient who is hoping to get well and is able to go on with his work. To sum up: elaborate hospitals may be needed for investigation and distribution of cases, but much good might be done by palliative treatment at clinics, of which many would be needed. Whilst these clinics may carry on research in therapeutics, they are not, perhaps, so likely to prove valuable in research on ætiology.

PUBLIC HEALTH IN GERMANY.

LAST week, under the auspices of the Chadwick Trust, Prof. Rudolf Abel, of the University of Jena, gave two lectures in London on the Development and Present State of Public Health in Germany. We have already briefly reported the first of these lectures,[1] which was given on Oct. 19th, with Sir William Collins in the chair, and have referred to Prof. Abel's intention to compare the conditions and history of public health work in Germany and England. This theme was pursued by Sir Arthur Newsholme, who presided on Oct. 20th, and pointed out that the English development arose largely from humanitarian motives, though economic motives also had their influence, whereas the more recent German impulse started in the laboratory, in the work of Pettenkofer, and later in that of Koch and many others. Prof. Abel's second lecture was a survey of almost the whole field of public health and social work. He said that the German

[1] THE LANCET, Oct. 23rd, p. 886.

law, which requires vaccination in infancy and at the age of 12, is strictly enforced, there being no conscientious objection. As in England, coincident with enforcement of vaccination, there has been the well-known inversion of the age-incidence of small-pox; up to 1874 nearly all deaths from this disease occurred at ages under 12, whereas in 1916–17 90 per cent. occurred at ages over 40, and a large proportion of the small number of deaths occurred among foreigners. In Germany no fees are paid to doctors for notifying cases of infectious disease, this being regarded as a duty they owe to the State. There is more typhoid in Germany than in England, but very much less measles. The tuberculosis death-rate, although always higher than in England, shows an almost parallel course of decline. Dealing with tuberculosis, venereal disease, and alcoholism, which he called "the three national scourges of Germany," Prof. Abel said that in Germany there are 186 tuberculosis sanatoriums for adults with some 20,000 beds, 318 sanatoriums for children with some 27,000 beds, 183 open-air schools, and 444 hospitals and homes for tuberculous patients. The success of the various methods of treatment and advice at these institutions, in dispensaries, and at the homes of the patients is obvious, though still inadequate The increase in the death-rate from tuberculosis during the late war was greater in Germany than in England; and after a post-bellum decline there was a smaller but significant rise once more in 1923–24, during the privations involved in the so-called demonetisation of German finance. Venereal diseases also increased greatly in war-time. In 1909 a census was taken of patients under treatment for these diseases. For Germany as a whole the proportion at the time of the census was 20, and for the large towns was 80 per 10,000 inhabitants. During the war there was some provision for compulsory treatment of patients, which has not been continued, and at the present time the prohibition of treatment by quacks, already enforced in England, is under consideration. The alcoholic question, Prof. Abel pointed out, is one of serious public health import. Before the war the expenditure per head on alcoholic drinks was 45*s.* a year, but during the war it fell greatly, as also did admissions to lunatic asylums for alcoholism. The lecturer spoke strongly of the need for further regulation of the consumption of alcohol, and for the encouragement of sport and other counter-attractions.

In the important work of maternity and child welfare much work has been done in Germany, and in Prof. Abel's opinion midwifery is on the whole better regulated than in England. Abortion, however, has greatly increased in recent years and infant mortality is higher than in England. Thus in 1925 the infantile death-rate in Germany was 105, but in England only 75 per 1000 births. The school medical service on the average is less developed than in this country, but all children are examined at the time of entering and on leaving school. Medical supervision is being gradually extended to the continuation schools, which must be attended by all children up to the age of 18. The general use of hospitals almost dates from 1869, when Lister initiated the antiseptic treatment of wounds. Prior to this the view held in Germany apparently was that of Florence Nightingale—namely, that hospital treatment greatly increased the chance of death. Most hospitals are now supported out of public funds, and there are no separate hospitals for infectious diseases, even small-pox being treated in rooms off the general wards. The number of hospital beds available in Germany is stated to be over 5 per 1000 inhabitants. In housing and town-planning it is evident that Germany has progressed much less than England. Town-planning Prof. Abel regarded as being of French (Napoleonic) origin, while for the initiation of underground sanitation (water-supplies and sewerage) Germany is indebted to England. Town-planning as carried out both in France and Germany in central sites has been mischievous, he thinks, because owing to the uncontrolled price of these plots of land, it has been necessary to crowd tall houses on each plot. Over 46 per cent. of the population of Berlin live in one or two rooms, the corresponding figure for Edinburgh being, it was stated, 36 per cent. Lantern slides were shown to illustrate the customary five- and six-storey tenement dwellings, and were reminiscent of the worst conditions of New York; in Berlin on an average 76 families, and in Munich 39 families, live in each block. After the war a million German refugees returned from other countries, and owing to cessation of all building operations the housing position in Germany became desperate. There has been fixation of rents, as in England.

In the last section of his rapid review Prof. Abel made some general remarks on the transition from environmental hygiene to personal hygiene, quoting with approval the saying that environment holds the organism in its grip and hammers it into shape; he described some of the many attempts to shape personal life which are now being made in Germany as in other countries. It is evident, however, he said, that England has gone further and has had greater success in this, as well as in environmental hygiene, than the German Empire, though for part of this difference the pitiable financial position of the mass of population of Germany is partially responsible.

The Chadwick Trust are to be congratulated in securing for the English public access to the lucid and accurate information which Prof. Abel was able to give in his two lectures.

CIVIC HEALTH WEEKS.

AN October week has been chosen by many municipalities in the British Isles to bring to the notice of all good citizens the efforts made on their behalf to render life clean and healthy. We call attention on another page to the well-designed and executed booklets issued by the health committees of St. Pancras and Kingston-upon-Hull. Dr. SOWDEN'S idea is to provide a homely work of reference for parents so that they may avoid the common mistakes and risks in the upbringing of children. Dr. DALEY arranged an open day at the maternity home, welfare centres and after-care colonies, with a variety of health films at the local kinemas. In Dublin, under the auspices of the Women's Health Association, the secretary of the new Department of Local Government and Public Health addressed a large gathering on the advantages already gained from cleanliness in a big sense and foreshadowed a scheme for the medical inspection of school-children in Ireland. In Liverpool the celebration of "Civic Week" was so successful that it is likely to become an annual event. Here we may have a great potentiality for good as yet largely untapped. If "Civic Week" becomes an institution adopted in other large towns it is essential that due importance should be attached to the medical aspects of a city's life and greatness. Few laymen realise how all-pervading are the activities of the medical officer of health's department, nor how much they are indebted to his staff for the safety, cleanliness and comfort of the daily round. Properly utilised, such an occasion could be made most telling in the diffusion of elementary facts of hygiene, by lecturettes, exhibition of lantern and kinematograph films, and by demonstrations of certain phases of sanitary work in actual progress.

CONFERENCE ON THE CARE OF CRIPPLES.—A joint conference on the care of invalid and crippled children is to be held by the Invalid Children's Aid Association and the Central Committee for the Care of Cripples on Thursday and Friday, Nov. 18th and 19th, in the great hall of the British Medical Association in Tavistock-square. Mr. Neville Chamberlain, Minister of Health, will give the opening address, and the chair will be taken at the four sessions by Lord Islington, the Duchess of Atholl, M.P., Sir Arthur Stanley, and Sir Robert Jones. Among the medical speakers will be Mr. R. C. Elmslie, Mr. Harry Platt, Dr. Stuart Cowell, Dr. Arbour Stevens, and Mr. G. R. Girdlestone. Further particulars may be had from the hon. secretaries of the Association and Committee at 117, Piccadilly, London, W. 1. The sessions will begin at 10.30 and 2.30 on each day.

Annotations.

"Ne quid nimis."

GASTRIC ULCER AND GASTRIC CANCER.

A GREAT deal has been written about the relation of gastric cancer to gastric ulcer, and very different opinions have been expressed. It is a hackneyed subject to which there would be no object in referring—unless new data could be brought forward—were it not that the declared high incidence of cancer grafted upon simple ulcer in the stomach is used by some surgeons of authority as a strong argument in favour of submitting the patient with gastric ulcer to an excision operation of some severity. Belief in the reality of the high occurrence rate of this terrible complication must necessarily often be the deciding factor in arriving at the grave decision to perform an extensive gastrectomy. It is therefore not unfitting that from time to time attention should be directed to such an important but still debatable question, and on p. 925 we publish a letter from Dr. Alfred Plaut, who reviews very unfavourably the evidence accepted by many in support of the claim that gastric ulcer frequently ends in gastric cancer. He points out the fallacies in many statistical publications. Particularly worthless, he considers, is the long history of indigestion which sometimes precedes cancer, for not only may simple dyspepsia vitiate such statistics, but in a number of instances it has been proved that cancer of the stomach may follow a very prolonged course. In the earliest stages it is symptomless, and so remains unrecognised for a period, the length of which is unknown. Dr. Plaut declares that reliable hospital statistics show unrecognised cancer of the stomach to reach as high a percentage as 20. The commonest site of cancer, he points out, is not the commonest site of ulcer. This latter disease has a peculiar geographical distribution, some countries or districts in the same country showing a much greater incidence than others. Cancer shows no parallel distribution as it should do were there an important relation between the two diseases. Whilst not denying that very rarely cancerous change appears in a simple ulcer, Dr. Plaut goes the length of saying that the belief that it is a more common event is a matter of psychology, a simple assertion or affirmation, and does not arise from a purely medical decision.

A summary of the true medical evidence may be given. In 1914 W. C. McCarty and A. C. Broders [1] from histological investigations said that the incidence of malignant transformation was 70 per cent. This figure has been questioned by J. Ewing [2] and by B. H. Spilsbury,[3] who lay stress on the fact that, at the margin of a simple ulcer, distortion of the epithelial arrangement is caused by fibrosis and can easily be mistaken for cancer. J. H. Dible [4] did not find a single undisputable case amongst 126 excised ulcers, neither did J. Morley [5] find a case amongst 50 resected ulcers. Berkeley Moynihan,[6] partly from consideration of the history, but partly from the researches of M. J. Stewart [7] at Leeds, who gives the incidence as 9·6 per cent. in the material submitted to him, believes cancer to be a not uncommon complication of gastric ulcer. H. Finsterer [8] found cancer in 26·6 per cent. of 175 resected callous ulcers; C. A. Pannett [9] in 10 per cent. of 41 resected ulcers, and V. Orator [10] in 30 per cent. of ulcers of the prepyloric region and 2 per cent. of ulcers situated elsewhere.

It can be regarded as certain that later statistics are not vitiated by the fallacy of regarding innocent, but disordered, growth at the fibrosed ulcer margins as malignant, and it may therefore be asked why some surgeons have found no examples of cancerous change in their resected material, whilst others give an incidence ranging between 10 and 30 per cent. The explanation is not far to seek. Every simple ulcer which exhibits malignant change is of the callous type. Such ulcers form adhesions to neighbouring organs into which they burrow so that their excision often becomes a matter of some considerable difficulty. Those surgeons who confine their resection operations to mobile ulcers will meet with a low cancer incidence in their material, whilst those who excise the callous adherent lesions will get a truer picture of what the real risk of malignant change is. The chance of malignant change is greater when the ulcer is near the pylorus, perhaps indeed as high as 30 per cent., but in general the risk of a gastric ulcer becoming cancerous would seem to be about one-third of this. As to the question whether this risk justifies extensive gastric resections, the answer can only be in the affirmative, as 10 per cent. is very considerably greater than the operative mortality of gastric resection, whilst subsequent cancer is only one of the less important causes of death in a patient suffering from gastric ulcer. After a properly performed partial gastrectomy the recurrence of symptoms from ulcer is a rarity.

[1] Arch. Int. Med., 1914, xiii., 208.
[2] Ann. Surg., 1918, lxvii., 715.
[3] Proc. Roy. Soc. Med., 1922, xv., 25.
[4] Brit. Jour. Surg., 1925, xii., 666.
[5] THE LANCET, 1923, ii., 823.
[6] Gastric and Duodenal Ulcer, 1923.
[7] Cancer Review, 1926, i., 223.
[8] Wien. klin. Woch., 1925, xxxviii., 295 and 321.
[9] Surgery of Gastro-duodenal Ulceration, 1926.
[10] Arch. f. klin. Chir., 1925, cxxxiv., 736

A HOSPITAL CENTRE FOR BIRMINGHAM.

IMPORTANT developments are announced in connexion with hospital policy in Birmingham—developments which put a new face on the situation. The General and the Queen's Hospitals had prepared and begun to carry out comprehensive plans for extension. The General Hospital had obtained by Act of Parliament the neighbouring St. Mary's churchyard for the purpose of a new out-patient and casualty department, and the Queen's Hospital had already erected new buildings. The Hospitals' Council, however, lately asked that these schemes should be suspended in order that the problem might be considered from a wider standpoint, and the governing bodies of the two institutions were invited to form a joint committee to consider the outlines of a scheme for a new hospital centre. This committee has now issued an important report which has received the approval of the boards of the two hospitals and of the Hospital Council. It is recommended that a new hospital centre shall be established on a site adjoining the University at Edgbaston, under the joint control of the General and Queen's Hospitals. To this end it is proposed that the two hospitals shall be amalgamated for all purposes and that the new hospital shall start with a minimum of 750 beds—a number based on the calculation that by 1931 a minimum of 2400 beds for general medical and surgical patients will be needed by the city, including those provided by the guardians of the poor as well as by voluntary boards. This ambitious and far-reaching scheme has been brought into the region of possibility by the generous gift of Messrs. Cadbury Brothers, which we reported last week (THE LANCET, Oct. 23rd, p. 884). Messrs. Cadbury offer to give the City Council 150 acres of land adjacent to the University, together with a donation of £5000 towards the initial expenses of laying out the site. The whole of the land is to become the property of the city, on the understanding that the City Council, in consultation with the Hospitals' Council, shall reserve 100 acres with power to grant long leases to the hospital authorities at a nominal rent, and it is hoped that the City Council will make the necessary roads and be responsible for the lay-out and maintenance of the remainder of the land for use as playing fields, which some of the schools urgently require. The council, needless to say, has gratefully accepted Messrs. Cadbury's offer, for the site has been admirably chosen as standing on high ground in the south-west of the city and on the confines of the pleasant residential suburb of Edgbaston. Though well away from the centre of the city it will be well served by railway, electric tram, and 'bus routes, and

it is just beside the University. At present the medical school is housed in the Mason College building in the centre of the city, and the clinical work is divided between the two general hospitals. Under the new scheme it is intended that new buildings for the medical school shall be erected in conjunction with the hospital, so that the whole of the work of the school—theoretical and practical—can be undertaken in a group of buildings on the same site. Formidable financial obstacles have yet to be surmounted before the great project can be accomplished, but the City of Birmingham has now the opportunity of founding a real hospital centre with ample space for development.

SCARLET FEVER AND STREPTOCOCCI.

RECENT results have gone far to show the correctness of the view that streptococci are the causal organism of scarlet fever. Most of the work on the subject has been done in this country and America, and it is therefore interesting to read results obtained in Tunis by that accomplished experimenter C. Nicolle, who, in collaboration with E. Conseit and P. Durand, has investigated the same problem.[1] Their experiments were for a long time directed towards the reproduction of the disease in animals by means of an assumed filtrable virus, whose presence they suspected in secretions and exudates. No positive results followed, although the attempts were numerous and various species of animals were employed. Concluding that scarlet fever did not lend itself to animal experiments, the investigators made attempts—necessarily restricted—to inoculate human subjects; but these attempts likewise failed. At this stage the work of the Dicks became known, and the conclusion was reached that the failures were due to the employment of immune subjects, and that their repetition on subjects selected by the Dick test might give other results. Not having the Dick toxin at hand, the workers in Tunis attempted to test for susceptible individuals by using the urine of a patient suffering from the disease, which afforded, in this case, a cutaneous reaction. By this means two susceptible individuals were selected. A third person, not tested for susceptibility, was inoculated in the tonsil with a fragment of tonsillar tissue from the scarlatinal patient and developed a severe sore-throat without the typical eruption. A culture of streptococci from the scarlet fever patient, in the fourth generation, was introduced into one tonsil of one of the susceptible persons with the result that a typical attack of the disease occurred after six days' incubation. The second susceptible subject was injected subcutaneously with a half c.cm. of the urine (which served, as we have said, as the Dick toxin); two days later this subject showed a generalised scarlatinal eruption and pyrexia, which the authors interpret as a specific toxic phenomenon. These experiments are few and open to objection; but it is of some importance that every observation bearing upon this problem should be recorded, and especially those in which genuine scarlatina appears to have followed inoculation with cultures of streptococci.

RESEARCH IN DAIRYING.

SINCE the National Institute for Research in Dairying was first established at University College, Reading in 1912, the work undertaken there has developed year by year. The Institute now comprises three main sections: dairy husbandry, chemistry, and bacteriology, coördination being secured through the agency of a professional committee, consisting of the heads of departments and certain members of the Faculty of Agriculture. Under the first section a number of different problems connected with the management and feeding of dairy stock have been tackled, including work on calf rearing and the detection of abnormal and vegetable-tainted milk. The chemical constitution and other properties of milk have presented a variety of more or less complicated problems. Studies have been made on the coagulation properties of milk and on calcium metabolism; physico-chemical methods have indicated the very significant part played by caseinogen in the control of the secretion of calcium in milk. The effects produced by very large doses of certain inorganic salts on the calcium content of the blood and of the milk of lactating cows have also been investigated; it appears to be difficult by such means to effect any significant alteration in these constituents or in the yield and composition of milk. The close inter-relationship of these problems is illustrated by the part played by the calcifying vitamin (vitamin D) in calcium assimilation and in the resulting calcification of the bones. A cow fed on a diet lacking in fat-soluble vitamins will deplete her skeleton to the extent of one-quarter of its calcium content in the endeavour to make up calcium-deficiencies in her milk. Experiments have been conducted on the vitamin content of the butter made from the milk of stall-fed cows in winter time. It has been demonstrated that such feeding may reduce the vitamin content of the butter to one-tenth of its summer value, but that the summer value in vitamin A may be obtained by adding cod-liver oil to the ration, the butter still remaining white. Other experiments have shown that there are differences in the vitamin content of winter foods in common use; for example, meadow hay is richer in these factors than seeds hay. The influence, if any, of the vitamin content of the food on the yield and composition of the milk is being investigated. Among other problems which have been solved by the Institute is the question of ropy milk. This has been shown to be due to at least two entirely different causes: the physical type of ropiness which appears when the milk is passing over the cooler and is not present in the bulk milk in the churn, and the more generally recognised type which causes the bulk milk to become ropy and which is due to the action of bacteria. Courses of "clean milk" instruction and demonstration are arranged by the Institute every year, a great deal of advisory work among farmers also being carried out. But the work of the Institute is still handicapped by lack of funds.

[1] Archives de l'Institut Pasteur de Tunis, 1926, tome xv., No. 3.

THE JUBILEE OF PROFESSOR SCHMIEGELOW.

ON Oct. 13th Dr. Ernst Schmiegelow, professor of oto-laryngology in the University in Copenhagen, celebrated his seventieth birthday by delivering his last lecture at the Rigshospital, thus finishing his active career there both as head of the clinic and as professor of his specialty. That he is not without honour in his own country was shown by the manifestations of esteem and regard from his townsmen and compatriots, who presented him with a striking portrait of himself painted by the well-known Danish artist, Henningsen. In addition, the brotherhood of laryngologists in other lands united to present him with a bas-relief portrait in bronze, by the Swedish artist, Gosta Carrell. This had been subscribed for by friends and admirers from many countries, under the leadership of Prof. Gunnar Holmgren (Stockholm), who, in their name, presented it to the Throat Clinic of the Rigshospital. In addition to numerous colleagues from Sweden and Norway the following laryngologists, among others, were present in testimony of the international character of the occasion: Profs. H. Burger (Amsterdam), H. Marschik (Vienna), G. Spiess (Frankfurt), C. von Eicken, L. Kuttner, and E. Flatau (Berlin), and Sir StClair Thomson (London). The foreign delegates were welcomed with much private hospitality. A special meeting of the Danish Oto-Laryngological Society was held on the previous day, presided over by Dr. Strandberg, when by invitation three communications were made. Prof. Burger spoke on the Education of the Partially Deaf Child. Prof. von Eicken read a paper on Indications for Operation in Sinus Disease, and Sir StClair Thomson gave a

lantern demonstration of Technique and Results of Laryngofissure in Intrinsic Cancer of the Larynx. Dr. Strandberg is connected with the Finsen Institute at Copenhagen and will read a paper at the Royal Society of Medicine on Friday, Nov. 19th, before the Tuberculosis Society, the subject being the treatment of laryngeal tuberculosis by heliotherapy and artificial light.

MONOCYTES AND BACTERIAL INFECTION.

A GENERAL view of the specificity of leucocytoses leads to the conclusion that eosinophile cells are stimulated by worms (trematodes, cestodes, and nematodes living in the bowel, blood, or tissues) and large mononuclears by protozoa (whether hæmamœbæ, trypanosomes, spirochætes, or the virus of chicken-pox), while bacteria, if they excite any leucocyte, stimulate neutrophiles. Lymphocytes and basophiles are not known to respond to any acute parasitic infection. It is therefore of much interest to find an organism, which appears undoubtedly to be a bacterium, and yet causes characteristically and constantly a high grade of large mononuclear leucocytosis. An unexplained mortality among the stock rabbits of the Cambridge pathological laboratory was investigated by Dr. E. G. D. Murray in conjunction with Dr. R. A. Webb and the late Dr. M. B. R. Swann,[1] and after some trouble a small Gram-positive bacillus was found in the organs and isolated in pure culture; with it the disease was reproduced, and especially in sublethal doses a considerable leucocytosis, due exclusively to an increase in the large mononuclears, was regularly produced. The organism does not appear to have been described before, and the authors, falling into the easy fallacy of definitive names, have called it *Bacterium monocytogenes*. Its characters are of technical interest, but curiously enough Dr. Harvey Pirie has recently found the same microbe in a gerbille in South Africa. Dr. Murray and his colleagues describe also some experiments which emphasise the specificity of leucocyte response as clearly as Ehrlich's old observation that pyogenic infection in a person with a high grade of eosinophilia in the blood excites neutrophiles and not eosinophiles. On intrapleural injection of broth or *B. coli*, the cells of the resultant exudate were mostly polynuclears even when the blood showed a high mononuclear leucocytosis due to a previous infection with *B. monocytogenes*. If under the same conditions *B. monocytogenes* was injected into the pleura, the exudate contained large numbers of mononuclears. They also show that large mononuclears, which are poor phagocytes for bacteria in general, will eat their new bacillus as actively as neutrophiles.

A YORKSHIRE CANCER PAMPHLET.

THE Medical and Scientific Committee of the Yorkshire Council of the British Empire Cancer Campaign, under the chairmanship of Sir Berkeley Moynihan, has issued an attractive little volume of 75 pages entitled "Notes on Cancer for Medical Men." The chief object is to preach the gospel of "early diagnosis and early operation" as the only effective means of fighting cancer. The main part of the book is taken up with a short and clear account of the clinical aspects of cancer in the different sites of the body; the fact is emphasised that cancer in its earliest stage is a local disease and can then be certainly cured by operative removal. These two fundamental statements can be made to-day with the certainty given by experimental evidence, and it seems a pity that in the chapter on experimental cancer research this point has been completely missed. Two short statements are appended intended to educate the public on cancer, and separate copies of these will be given to any medical man desiring to distribute them among his patients. They are clearly written and could hardly be bettered. In the introduction to the "Notes" the statement is made that cancer is neither infectious nor contagious; the same statement has been issued by the Cancer Conference in Mohonk. There is, of course, general agreement that cancer is not contagious. But if Gye's view, which is referred to in the book, is correct and a living virus plays a part in the ætiology of cancer, cancer must be considered as an infection; it seems inadvisable that in a book of this kind those aspects of the cancer problem which are still the object of active investigation should be prejudiced by statements which might be misinterpreted. We are asked to state that a free copy may be obtained by any medical man free on application to the office of the Yorkshire Council, 47, Park-square, Leeds. The "Notes" are certainly worthy of a wide circulation.

THE PREVALENCE OF POLIOMYELITIS AND POLIO-ENCEPHALITIS.

THERE is a normal increase in the autumn each year of reported cases of poliomyelitis and polio-encephalitis, but the increase this year has been larger than usual, and groups of cases have occurred in several areas. We have already given[1] some details of the outbreak in Leicestershire, with special incidence in Leicester itself where 73 cases have been reported up to the present, a considerable number in older children and some in adults, and where half a dozen deaths, chiefly of the fulminating type, have occurred. Dr. C. K. Millard then stated that no more than a single case had occurred in any one house, and that practically no connexion between the cases had been traced. He suggested that under normal conditions the milder cases of poliomyelitis are apt to escape notification. In the week ending Oct. 16th, 62 cases of acute poliomyelitis and 16 cases of acute polio-encephalitis, 78 taken together, were notified from England and Wales, the counties reporting more than three cases being Kent 23, Leicester 8, and Middlesex 5. The outbreak in Kent has been practically confined to Canterbury and Thanet, where an ill-founded rumour of encephalitis lethargica at first gave rise to alarm. In Broadstairs 53 cases were notified between Oct. 14th and 25th, most of them of a mild type, only two deaths having occurred among them. The local sanitary authority of Broadstairs has issued a circular in which it is stated that the disease is carried from person to person, infection being taken through the nose and mouth, but, so far as is known, not carried by water or milk. Warning is issued against the gathering of children together; no child, it is said, should be allowed to enter any house where there is a case of sickness; the sick should be isolated from the healthy, and if strict isolation and appropriate nursing cannot be obtained at home the patient should be treated in the isolation hospital. Those who have been in contact with the sick should be isolated for three weeks, and the patients themselves for six weeks. Persons brought into contact with the patients are advised to disinfect nose and throat with antiseptic solution (pot. permang. 1 in 4000 normal saline, or hydr. perox. 1 in 100) by spray or snuffing from the palm of the hand, done in the first instance under medical supervision.

Dr. Robert Cunyngham Brown, C.B.E., who has been appointed a Commissioner of the Board of Control to fill a vacancy caused by the retirement of Dr. Robert Welsh Branthwaite, C.B., was Deputy Commissioner to the Board of Control for Scotland before accepting the position of Deputy Director-General of Medical Services at the Ministry of Pensions. Some of his earlier writings on the causation of nervous disease appeared nearly 30 years ago in our own columns.

[1] Journal of Pathology and Bacteriology, 1926, xxix., 407.

[1] THE LANCET, Sept. 25th, p. 678.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXCV.—THE TREATMENT OF TRACHOMA.

TRACHOMA is a chronic contagious disease in which such acute manifestations as occur are the result of superadded infections with well-known bacteria. The cause of trachoma itself is as yet uncertain. It manifests itself in many widely differing forms, all of which are stages in the evolution of the disease, each stage requiring appropriate treatment.

The disease is conveniently divided into four stages, known as trachoma I., II., III., and IV., according to the comparative prominence of the three features—follicles (or granulations), papillary hypertrophy, and connective tissue formation.

In Trachoma I., seen soon after infection has occurred, tiny grey pinhead follicles are sparsely scattered on the conjunctiva of the upper tarsus. Trachoma II. has three subdivisions: (*a*), in which enlarged follicles predominate; (*b*), in which a papillary hypertrophy coexists with the follicles (this subdivision is split up into trachoma II. (*b'*), which is unmixed trachoma, and trachoma II. (*b''*), which is trachoma complicated by spring catarrh); (*c*), in which trachoma is complicated by a superadded infection with the Koch-Weeks bacillus, or the Morax-Axenfeld bacillus, or the gonococcus (a common non-venereal conjunctival infection in the Near East). Trachoma III. is the stage in which cicatrisation has begun. Trachoma IV. is cured trachoma, in which cicatrisation is complete.

Trachoma I.

This stage may be present without causing any symptoms and without producing obvious signs until the lid is everted, when tiny pinhead follicles are seen on the conjunctiva of the tarsus and at the retro-tarsal fold, more rarely in the fornix. With a lens or slit lamp may be seen a system of blood-vessels invading the cornea, associated with tiny follicles between the corneal epithelium and Bowman's membrane.

Treatment of trachoma at this early stage is begun by the application of silver nitrate solution 2 per cent., rubbed on the everted lids daily with a pledgelet of cotton-wool wound round the end of a special glass rod. The cotton-wool must be of good quality or it will be impossible to make a neat brush. A fresh rod is used for each eye; after use it is placed in an antiseptic solution and left there until it can be sterilised by boiling. If several patients are being treated the rubber gloved hands should be immersed in an antiseptic solution such as perchloride of mercury, 1 in 1000, in 70 per cent. spirit. The action of silver nitrate is not imitated by the organic silver compounds, such as argyrol, protargol, and others. If, when the patient is next seen after a rubbing, there is any coagulum or necrotic material remaining, the next treatment should be postponed until the slough has separated.

If there is much discharge this treatment should be carried out twice a day. The eyelids and the conjunctival sacs should also be bathed with a solution of perchloride of mercury, of a strength, for adults 1 in 5000, for young children 1 in 10,000. The eyelids should be anointed nightly with some ointment.

This treatment must be continued for many months. Under its influence the trachoma follicles may become absorbed without leaving any trace of cicatrisation; more usually, however, faint lines of cicatricial tissue are left (stage IV. of the disease). In the majority of cases the treatment is not continued for a sufficiently long period, and trachoma I. passes into II. or III.

It is not necessary or even advisable to neutralise the silver nitrate after its application with salt solution, as this is done quite efficiently by the tears. It is advisable to vary the treatment from time to time. Instead of silver nitrate, cyanide of mercury 1 per cent., copper sulphate 10 per cent., perchloride of mercury ½ per cent., may be employed. In addition, the instillation t.d.s. of zinc sulphate ½ per cent., or zinc chloride ¼ per cent., may be useful.

It must be remembered that many cases of trachoma pass into the cured stage IV. without treatment of any kind and without any complications; also that monocular trachoma is not uncommon. Treatment by means of a pencil of carbon dioxide snow in this stage may be satisfactory. It must be applied with considerable judgment or serious scarring may result. Treatment by means of radium has in my hands been unsatisfactory. Local phototherapy for trachoma has been employed experimentally by means of the mercury-vapour lamp suitably screened acting on the everted lids.

Surgical treatment is not usually indicated in trachoma I.; however, radical cure of the disease may occasionally be attempted, when it is confined to the conjunctiva of the upper tarsus, by means of removal of the tarsus with the diseased conjunctiva overlying it. Subconjunctival injections behind the retro-tarsal fold have been employed. They are attended with considerable inflammatory reaction, and should only be used by specialists.

Trachoma II.

In trachoma II. (*a*) the gelatinous follicles are ruptured, mechanically allowing the escape of their contents. This may be carried out by means of Graddy's forceps assisted by a curette. Excessive bleeding is prevented by thoroughly bleaching the conjunctiva beforehand with adrenalin chloride solution, 1 in 1000. A general anæsthetic is frequently necessary, though in a large number of cases a thorough infiltration of the lids with novocaine solution 1 per cent., with instillation of 4 per cent. cocaine hydrochloride into the conjunctival sac is quite adequate; 10 or 15 minutes must be allowed for the anæsthetic solution to act.

The upper lid is everted and Graddy's forceps are applied to the everted conjunctiva and withdrawn, carrying in front of their concavity the gelatinous contents of the follicles which are ruptured by the passage of the instrument. If follicles are present in the fornical conjunctiva, previous to using Graddy's forceps the retro-tarsal fold should be seized with a pair of toothed forceps in order to allow of the lid being re-everted; the fornix is then curetted. The lower lid should be curetted, since unless the conjunctiva is loose Graddy's forceps are not applicable.

Perchloride of mercury solution, 1 per cent., is then applied to the bleeding conjunctiva by means of a pledgelet of good quality cotton-wool wound round a glass rod. If necrosis of the conjunctiva occurs, the use of escharotics should be deferred until the necrotic membrane has disappeared. Otherwise the perchloride should be applied once daily.

Improvement should have occurred at the end of a week, and at the end of a fortnight the commencement of the change into trachoma III. should be observed. At the end of a month a network of cicatricial lines should be seen. This improvement is usually permanent, although in the absence of further treatment relapse is liable to occur with a redevelopment of follicles. The treatment may be supplemented by the use of zinc sulphate drops ½ per cent., or zinc chloride drops ½ or ¼ per cent., bathing with an antiseptic solution such as perchloride of mercury, 1 in 5000, and anointing the edges of the lids with ung. hydrarg. ammon. dil. The mechanical treatment sometimes needs to be repeated after 7 or 15 days. Inevitably some cases develop entropion, seeing that the process of cure depends on the laying down of scar tissue. If inflammatory signs and excessive discharge suggest a superimposed conjunctivitis, no operative procedure should be undertaken. In such cases the conjunctivitis should first be treated with silver nitrate, 2 per cent.

Invasion of the Cornea.—When ulceration from trachomatous invasion of the cornea occurs, silver nitrate, 2 per cent., should be applied to the conjunctiva once or in severe cases twice daily.

The eye should not be tied up except out of doors, but should be bathed by the patient every ten minutes or so during his waking hours with perchloride of mercury solution 1 in 5000, or a weaker solution if the skin becomes irritated. In ordinary cases the pupil should be kept dilated

with atropine; but if a perforation seems likely to occur atropine should be discontinued.

Pannus.—Treatment of pannus is for the purpose of improving deteriorated vision, but in advanced cases scar tissue obstructs the nutrient flow between the corneal corpuscles and renders necessary the persistence of pannus vessels. I therefore believe that attempts to reduce the vascularity of the cornea in trachoma are harmful.

When there is great thickening of the tarsus together with the presence of follicles of the conjunctiva, the radical operation of combined excision of the tarsus with the overlying conjunctiva is much the best procedure, provided the conjunctiva of the fornix is free from follicles.

Trachoma II. (*b'*) may be treated by curetting and application daily of perchloride of mercury 1 per cent., or more satisfactorily by the combined excision of tarsus and conjunctiva overlying the tarsus. This operation may be performed for upper and lower lids.

Trachoma II. (*b''*) must be treated by the combined excision operation. Even after this it is common for symptoms of spring catarrh to persist.

Trachoma III.

In this stage cicatrisation has definitely begun, or is more or less advanced. Islands of inflamed conjunctiva or of trachomatous follicles are seen to be surrounded by a network of fine lines of connective tissue. In this stage spots of necrosis often result from the pressure of the shrinking connective tissue (post-trachomatous degeneration). The necrotic tissue may remain as a cyst or may become calcareous.

The beginning of this stage is best treated by the application of perchloride of mercury solution, 1 per cent., daily. This may be alternated with the use of copper sulphate solution 10 per cent. The old-fashioned copper sulphate stick is very painful, may cause excessive scarring, and when many patients are being treated carries infected mucus from one to another. In some cases which are not apparently very severe corneal complications occur in the form of small white spots of infiltration situated beneath the superficial epithelium, not staining with fluorescein. Copper should never be used in this condition; daily treatment with silver nitrate solution, 2 per cent., together with frequent skilled hot bathings, and atropine drops 1 per cent., should be substituted. In certain selected cases the combined excision of tarsus and overlying conjunctiva may be satisfactorily performed. This operation has the advantage of curing entropion and of preventing its occurrence, for entropion depends on cicatricial changes in the tarsus; when the tarsus has gone it cannot occur. When the operation is performed with ordinary skill there is never any ptosis afterwards, and from inspection it is impossible to know that any operation has been performed.

The complications of trichiasis and entropion frequently occur in this stage of trachoma. The three operations, Streatfield's, van Milligen's, and Saunders's, for relieving these conditions cannot here be described.[1]

The necrotic foci mentioned as frequently found in this stage merely require opening, and calcareous particles, if present, picking out.

Trachoma IV.—Prophylaxis of Trachoma.

Trachoma IV., being the stage of cured trachoma, requires no treatment unless a relapse occurs.

Prophylaxis.—It is impossible here to deal with the prophylaxis of trachoma from a general, social, or institutional standpoint, but a few words must be said as to prophylaxis in the family of the sufferer. If possible, the infected person should have a separate bedroom; in any case a separate bed. He should not use the same washing utensils, nor the same towel or table-napkin. Roller towels should be abolished from the house. All members of the family should have instilled into their eyes as a prophylactic drops of zinc chloride solution, ½ or ¼ per cent., twice a day. Adequate treatment for the infected person may have to be persisted with for years.

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[1] MacCallan: Transactions of the Ophthalmological Society, 1925.

Special Articles.

BRITISH ORTHOPÆDIC ASSOCIATION.

THE ANNUAL MEETING.

THE ninth annual meeting of this Association was held in London on Oct. 22nd and 23rd. On the morning of the 22nd the meeting took place at the house of the Royal Society of Medicine. After the short business session, Mr. H. A. T. FAIRBANK gave his presidential address on Some General Affections of the Skeleton. He showed a large number of clinical photographs and radiograms, illustrating the various points in the co-relation of certain of these obscure bone conditions.

The subject selected for discussion at the morning session was

Injuries of the Carpus.

Mr. MAX PAGE, who opened, commented on the fact that the knowledge of this complicated subject was of comparatively recent date. He quoted largely from Mouchet, Destot, and Kellogg Speed, and presented a simplified classification based on the findings of the French school. He dealt in some detail with the treatment and prognosis.

Mr. S. T. IRWIN gave a careful analysis of the records of the Royal Victoria Hospital, Belfast, during a five-year period. He reported the incidence of each particular fracture, the period of disability, and the functional end-result. Mr. H. PLATT suggested a classification, similar to that of Mr. Page, and reported in detail the results of carpal injuries from his fracture clinic at Ancoats Hospital, Manchester, over a five-year period. Mr. THURSTAN HOLLAND, Mr. R. C. ELMSLIE, and Mr. N. DUDLEY BUXTON carried on the discussion. Sir ROBERT JONES gave the results of his personal experience, and described the treatment he was accustomed to employ. He said that, with a fractured scaphoid, if the wrist moved freely under anæsthesia, he immobilised for three weeks in dorsiflexion and the end-result was good. He had found that if the wrist did not move easily under the anæsthetic prognosis was less good. He did not consider that removal of the whole or part of the scaphoid, although sometimes necessary, resulted in a perfect hand.

Clinical Meeting.

The clinical meeting on the 22nd was held at St. Thomas's Hospital. Two operations were performed, Mr. W. R. BRISTOW removing a torn cartilage from the knee-joint, and Mr. PAGE arthrodesing a hip. This was followed by a clinical demonstration; Mr. BRISTOW showed a group of patients treated in the orthopædic department of the hospital, illustrating points of interest in the surgery of the joints and bones. The first group showed the results obtained from a modified arthroplasty of the hip, the reconstruction operation devised by Whitman—viz., excision of the head, remodelling of the neck, and lowering of the trochanter. Three patients whose hips had been arthrodesed were shown for comparison. Four patients were shown to illustrate the end-results of the treatment for recurrent dislocation of the shoulder; one cured by a deltoid muscle sling, one by repair of the glenoid ligament after the Clairmont-Ehrlich operation had failed. The other two patients were cured by a bone operation to raise the rim of the glenoid fossa, the glenoid ligament being found torn and so shrivelled as to be incapable of repair. Two patients illustrated reconstruction of the elbow-joint, and one who had had a fractured internal epicondyle removed from the interior of the joint. This patient, whose elbow was stiff for some long time, had recovered full movement. Two patients in whom the ankle-joint had been arthrodesed for old mal-united Pott's fracture were shown walking well and without pain. Patients were shown illustrating the result of repair of muscle and tendon, bilateral

rupture of the ligamentum patellæ, repaired by a free fasciæ graft, and bilateral rupture of quadriceps by transplantation of tensor fasciæ femoris to patella. Cases were shown of chronic sclerosing osteomyelitis (Garré), fibrocystic disease of the neck of the femur, dealt with by curetting and grafting, hæmophiliac knee, and adolescent coxa vara treated by open operation. A group of patients with affections of the knee-joint were shown illustrating the end-results after synovectomy, cheilotomy, patello-femoral arthroplasty. Mr. PAGE showed two patients in whom he had removed five inches of bone from the femur to shorten the leg, and a patient who was cured of a clicking jaw by the removal of the inter-articular cartilage.

The members were entertained to tea in the Shepherd Memorial Hall by invitation of Miss Lloyd Still, the matron of St. Thomas's Hospital, after which a short visit was paid to the orthopædic wards. Dr. J. B. MENNELL then gave a demonstration in the massage department of the methods he employs in manipulating the joints. He explained the various points of his technique.

Short Papers.

The morning of the 23rd was devoted to short papers.

Mr. E. P. BROCKMAN reported several cases of renal rickets and showed a series of radiograms. He also showed a tibia from one of the patients and for comparison the tibia from a rachitic patient, and a normal tibia from a child of the same age. He had investigated the microscopic changes about the growth disc, and showed a series of coloured drawings illustrating the changes which he had found.

Mr. G. PERKINS reported the end-results of the operation of excision of the head of the first metatarsal in 50 patients from the orthopædic department of St. Thomas's Hospital. He found that from the patient's point of view the operation gave a good result in 96 per cent. of cases. He called attention to the fact that pain about the forefoot was not relieved by excision of the head, and that free mobility must be restored to the toes. He suggested that the bad results, associated in the mind of some surgeons with this operation, were due to coexisting pain about the forefoot and that treatment for the two conditions should be simultaneously undertaken. Mr. Perkins's paper was discussed by Prof. MURK JANSEN, Mr. T. H. OPENSHAW, Mr. A. B. MITCHELL, Mr. ELMSLIE, Mr. T. ARMOUR, Mr. BRISTOW, Mr. W. A. TRETHOWAN, Mr. ROCYN JONES, and others.

Mr. C. LAMBRINUDI described an operation which he had devised for the cure of paralytic drop-foot, and showed two patients.

Mr. BROCKMAN reported a case of femoral aneurysm arising in a boy suffering from Pott's disease of the spine. He showed the vessel which had been excised by Sir Cuthbert Wallace, and a microscopic section of the artery wall showing local tuberculous disease.

Mr. J. F. BRAILSFORD showed radiograms of the spine from the patients illustrating spondylolisthesis—erosion of the bodies caused by aneurysm and the localisation of a foreign body.

Owing to shortness of time papers by Mr. Page, Prof. Jansen, and Mr. J. B. Barnett, which were to have been presented, were taken as read.

Visit to Orthopædic Hospital at Pyrford.

On Saturday afternoon some 40 members visited St. Nicholas' and St. Martin's Orthopædic Hospital at Pyrford, in Surrey. This open-air hospital of 160 beds, which belongs to the Waifs and Strays Society, is staffed by the orthopædic department of St. Thomas's Hospital and Dr. T. M. Hardy, of Byfleet, the local physician. Members were shown round the hospital and visited the open-air wards, after which a clinical demonstration was given. A number of patients was shown, including a group of eight cases of pseudo-coxalgia with serial radiograms showing the various changes, over a three-year period, and for comparison two patients with flattening of the head of the femur and cavitation of the neck.

THE ANNUAL DINNER.

During the session of the British Orthopædic Association held last week, the dinner of the Association took place on Friday, Oct. 22nd, at the Café Royal, London. Mr. H. A. T. FAIRBANK, the President of the Association, was in the chair, and was supported by King MANOEL, of Portugal, and a group of representative guests.

"The Prosperity of the Association" was proposed by Sir JOHN BLAND-SUTTON in unexpected and amusing terms, under which lay the serious message that the public belief in osteopathy must be countered by resolute work on the part of the rising school of British orthopædic surgeons. The prospect lay before these surgeons, he said, of taking over the whole of limb surgery in proper relation to surgery in general, the era of steel and leather encasement having given way to scientific principles; and he urged that the increasing number of men attracted to orthopædics should learn the lessons of comparative anatomy in relation to the treatment and manipulation of joints from the extraordinary range and delicacy of action possessed by the lower animals, many of whom were able to scratch any part of their persons with their hind limbs, while the elephant, planted like a rock on enormous pillars, could execute tiny gentle movements. He warmly recommended to the attention of orthopædic surgeons the unhappy moral side of many of their patients, whose outlook on life was prone to be morose owing to their physical handicaps. The reward of successful treatment that the orthopædic surgeon might obtain was instanced, he said, by the gospel miracle where the cripples "went on their way rejoicing," while poets, from Homer downwards, had testified to the fact that physical failings might warp in all their social relations the mentality of the victims, Thersites being a classical example of this decadence.

The PRESIDENT, in reply, alluded to the presence of a representative group of guests and testified especially to the debt owed by orthopædic surgery to Sir Robert Jones and King Manoel, of Portugal, who throughout the war had worked untiringly in close association, their pertinacity having succeeded in instituting a general organisation of orthopædic treatment for the sufferers in the war. He thanked the authorities and staff of St. Thomas's Hospital, and the President and Council of the Royal Society of Medicine for the valuable facilities accorded to the orthopædists in session, and in acknowledging Sir John Bland-Sutton's appreciation of the growing specialty, he mentioned that it was the intention of the Association to publish a journal recording their activities.

The toast of "The Guests" was proposed in eloquent terms by Sir ROBERT JONES, and was replied to by Sir ARTHUR STANLEY, Chairman of the Joint Council of the British Red Cross Society and Order of St. John. Sir Arthur Stanley, speaking with great gaiety as one "who had for many years been encased in steel and leather," found that the implication of moroseness alluded to by Sir John Bland-Sutton might be a very convenient one in his position as treasurer of St. Thomas's Hospital, inasmuch as when demands were made upon the institution (as they might be by Mr. Rowley Bristow in behalf of his orthopædic department) inability to meet those demands would now be attributed to an unfortunate infirmity of character.

In response to the wish of the gathering, King MANOEL also replied for the guests, though, as he said, he was hardly a guest, inasmuch as he was an honorary member of the Association who had ceased

active coöperation. King Manoel made moving references to the difficulties which his "twin brother," Sir Robert Jones, and himself had been compelled to face in the early days of the war, when the establishment of an orthopædic centre at Shepherd's Bush was first decided upon. He told how the movement had spread till other centres, great and small, were established in considerable number, and pointed out that the experience thus obtained by the public, in learning what could be done, by the medical profession, and by the surgeons, in learning how to do it, was now splendidly available for sufferers from industrial accidents.

"The Health of the President" was proposed by Prof. MURK JANSEN (Leyden), when Mr. FAIRBANK, in reply, said that the detailed labour had fallen upon Mr. R. C. Elmslie, the Vice-President of the Association, and Mr. Bristow, orthopædic surgeon at St. Thomas's Hospital, where the excellently attended meeting of the day had been held. Mr. BRISTOW also replied.

At various intervals between the speeches Mr. Victor Marmont, a pianist, accompanied Mr. Tom Kinniburgh, who sang an assortment of suitable songs in a spirited and artistic manner which should make him in request at similar gatherings.

AMERICAN PUBLIC HEALTH ASSOCIATION.

FIFTY-FIFTH ANNUAL MEETING.

(FROM AN OCCASIONAL CORRESPONDENT.)

THE annual meeting of the American Public Health Association was attended by health officers and others interested in the promotion of public health from all parts of the United States, from Canada and from South America. The conference assembled at Buffalo N.Y., on Oct. 11th and lasted four days. In this time a great amount of scientific work was reported and discussed, the various sections meeting synchronously, so that it is impossible to mention in brief space the greater part of the subjects raised. The most notable trend observed, however, was an inclination to seek a new orientation in public health work; one that should mobilise the general practitioners of medicine and engage the support of all the educational forces of the country.

Presidential Address.

The note of appraisal was sounded in an eloquent opening address by the President, Prof. C.-E. A. Winslow, of Yale University, who attributed the astonishing progress of the last 50 years to three elements in the public health movement: environmental hygiene, laboratory research, and education. But he pointed out that these methods had not achieved uniform success in combating the different diseases. Comparing statistics made for Manhattan and the Bronx in 1873–75 with figures compiled for greater New York in 1923–25, he showed that mortality-rates have fallen much more for some diseases than for others (scarlet fever 99 per cent., diphtheria 95 per cent., tuberculosis 79 per cent., acute respiratory diseases 53 per cent., and all causes together 42 per cent.). Three diseases show in this period a very marked increase in mortality: cancer 176 per cent., heart diseases 187 per cent., and diseases of the arteries 650 per cent. This new situation demands new methods. The early recognition of disease and attention to personal hygiene are obvious lines of defence: a man may die at 70 because he had an infected tooth at the age of 12. Mental hygiene is destined to play a rapidly increasing rôle (perhaps some day a preponderant rôle) in the public health movement. Since early diagnosis is so important, all physicians must coöperate in discovering early signs of disease. But since the public will not pay for medical advice until actual sickness is experienced some new way of remunerating the physician must be discovered. Dr. Winslow admitted that he had once been sceptical of the value of national health insurance, but as the result of a recent visit to England under the supervision of the Ministry of Health, he had found the Act "working better than its unsympathetic critics would have thought possible five years ago." Dr. Winslow was careful not to advocate any particular scheme of social medicine, though he made good fun of those who have an unreasoning fear of an ill-defined bogy that is called "State medicine."

The Dollar Value of a Life.

In a paper on the Economics of World Health, Dr. Louis I. Dublin, of the Metropolitan Life Insurance Company, gave some arresting figures of the economic value of human life. Taking males in the $2500 per annum salary class and subtracting from their wage-earning capacity the cost of their maintenance till death, he put the present cash value of each individual at the age of 18 as $29,000. By similar calculations he makes the vital capital of the United States five times as great as its material resources. The application of our present knowledge of preventive medicine would, he believes, mean a saving of six billion dollars yearly to the United States. In the last 20 years the Metropolitan Life Insurance Company has spent 20 million dollars in the health supervision of its industrial policy-holders, reducing the mortality by 30 per cent. (double the fall in the general population) and saving the company 43 million dollars.

Death-rates of Male White Physicians.

In a study of the above rates by age and cause, Dr. Haven Emerson and Miss Harriet E. Hughes brought out the rather remarkable fact that 16·9 per cent. of the 2544 physicians who died in 1925 were reported to have died from ill-defined or undetermined causes. The death-rates from all causes among doctors in 1925 were lower than those for "all occupied males" in 1920 in the age-groups 25 to 44 years and 65 years and over, but almost identical in the age-groups 45 to 64 years. The specific death-rates for physicians from organic heart disease, pneumonia, and diabetes were found, on the whole, to be decidedly higher than that for all occupied males in the corresponding age-groups. These figures suggest that a greater emphasis on preventive medicine is necessary in the teaching of the medical schools.

A group of teachers of hygiene in colleges met for the first time at this year's conference. They were addressed by Dr. John Sundwall, of the department of public health at the University of Michigan, Dr. Thomas A. Storey, of Standford University, California, and Dr. H. G. Rowell of Columbia University, New York. The meeting was very well attended and a committee was appointed to continue the organisation of this group and to coöperate with the American Student Health Association.

A local committee provided a very attractive programme of entertainment, including a visit to Niagara Falls, where the delegates were entertained by the Shredded Wheat Biscuit Company, and subsequently saw the falls illuminated.

The new president of the Association is Dr. Charles V. Chapin, of Providence, R.I., and the meeting place for the year 1927 is to be the city of Louisville in Kentucky.

EXTENSION OF EVESHAM HOSPITAL.—The difficulties of small country hospitals are well illustrated by the attempt that is being made to obtain the means of enlarging this cottage hospital. Since 1880, its first year, the number of patients has increased eleven-fold, whereas subscriptions have increased only three-fold. The population of the district served is growing, and the medical staff are constantly troubled by the obstacles in the way of dealing with urgent cases. There are 14 beds and 2 cots, and it is proposed, as a palliative, to erect a women's ward of 12 beds and a children's ward containing 4 cots, to improve the operating theatre, and provide other necessary adjuncts.

MEDICINE AND THE LAW.

Intoxicating Liquor or Patent Medicine?

Is "Wincarnis with quinine" an intoxicating liquor or a patent medicine? The inquiry came before the courts in relation to the excise and the provisions of the Licensing Acts. The High Court seems to answer that it is both. A chemist and druggist, who in his shop at Brighton sold a policeman a bottle of Wincarnis with quinine, was the holder of an excise licence authorising the sale of patent medicines; moreover, the bottle wrapper bore the usual excise label declaring that medicine stamp duty had duly been paid on the contents. But the chemist did not also hold a justices' licence entitling him to be a retailer of intoxicating liquor. The Brighton bench held that by this omission he had committed an offence; they fined him £1 and ordered him to pay the analyst's fee. The point was reviewed by the High Court last week upon a case stated by the magistrates and the decision was upheld. The magistrates had found that the liquid was an intoxicating liquor, was medicated, and tasted of quinine. The High Court had only one question to consider—namely, whether there were materials whereon the magistrates could reach the conclusion which they in fact reached, that this liquid was wine. The court was satisfied that the magistrates had such materials; indeed, there were very scanty materials to the contrary. Before the Brighton justices a policeman had testified that he went to the chemist's shop one day in January last and asked for a bottle of Wincarnis. The chemist replied that he did not stock it and advised him to try a wine merchant. A few days later the persistent policeman was able to buy a bottle of the desired liquid at the same chemist; he found that the advertisements upon the wrapper bore statements that it was "made with choice wine," "contains one grain of quinine to the ounce to meet the requirements of the Board of Inland Revenue," "contains 28 per cent. of proof spirit," and advised that the bottle should not be shaken "as there is occasionally a little sediment from the wine after bottling." All these matters were prima facie evidence that the liquid was made with wine, and no rebutting evidence was adduced. The analysis indicated the presence of 27·99 per cent. proof spirit (equal to 13·99 per cent. of alcohol) and 1·2 gr. of quinine to the fluid ounce. The British Pharmacopœia was quoted as showing that a mixture containing one or more grains of quinine per fluid ounce was considered a medicine, and a good port wine was stated to contain 30 per cent. of proof spirit.

On the appeal it was argued for the chemist that the true test was palatability. Hosts do not circulate after dinner a decanter of "Wincarnis with quinine" in place of port; the liquid, as the magistrates said, "tasted of quinine," and quinine is bitter and unpleasant to the palate. It was answered that there are recognised beverages of which quinine is an ingredient. As the Lord Chief Justice observed, it is a question of degree. How much quinine is necessary to make wine cease to be wine? At one end of the scale a man might put a very little medicine of a pleasant taste into a very large quantity of good wine; at the other end he might put a large quantity of nasty medicine into a small quantity of indifferent wine. The magistrates in effect said that the liquid in the bottle sold at Brighton was wine, and there was no ground for upsetting their finding. Abandoning for once the traditions of judicial ignorance of the ways of the world, Lord Hewart added some shrewd remarks on the commercial aspect of the case. The commercial problem, he said, was how to put enough medicine into the wine to make it cease to be wine for the purpose of argument, and at the same time not make it unpalatable to the men, women, and children who would drink it—"especially those women who thought they suffered from nervous disorders and wanted an excuse for drinking port at 11 o'clock in the morning."

Unregistered Practitioner Convicted.

Claiming to be able to cure leprosy, diabetes, cancer, appendicitis, consumption, as well as many other minor and major ills, Emil Kumst was found guilty at Pretoria last month on 12 counts of contravening the Medical, Dental, and Pharmacy Act by practising as a doctor while unregistered. He was sentenced by the magistrate to a fine of £120 or 168 days' hard labour. Notice of appeal was given. Kumst, who had a well-advertised business for "pure natural oils" at Pretoria for some time, sold his mixture at between 17*s.* and 35*s.* a pound. According to the Government analyst, the actual cost of the mixture, which consisted of paraffin oil, eucalyptus oil, turpentine, sperm oil, and alkaline water, was about 4½*d.* a pound.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Accommodation for Encephalitis Lethargica.

SOME months ago the Scottish Board of Health held a conference to arrange some practicable method of dealing with certain types of encephalitis lethargica. The Glasgow Parish Council came forward with an offer of some 60 beds in the fine hospital at Stobhill, and their scheme is now in full operation. The method of selection of cases is this. When accommodation is wanted the medical officer of health of the area applies to the Board for a special form, which covers (1) acceptance by the local authority of responsibility for the case, and (2) a medical report with sufficient detail to enable the Board to judge whether the case is suitable for admission. In this way it is possible to make the most profitable use of the beds, and the parish council provides expert medical treatment and nursing on terms arranged. But apart from the special "local authority patients," the Council has had to provide for cases among the ordinary poor. At present the numbers in Stobhill are rapidly approaching a hundred, and there is still a long waiting-list in Glasgow, not to speak of other parts of Scotland. The cases are in charge of a visiting neurologist, who is also responsible for the mental observation wards, and the records and results of this institution are sure to be of great value in the study of a disorder that must still be regarded, pathologically and clinically, as a puzzle. The view is gaining ground that the great outburst of the disease is over and that we are now getting its late effects. The difficulty, in many cases, of determining the differential diagnosis is, of course, well known. Often the sequelæ seem to be the only proof that an alleged attack of influenza or similar symptom-group was really encephalitis, but when the true causation is discovered the facts will doubtless fall into their place. Meanwhile the disease is creating a troublesome problem, and the notifications, though small compared with those of the leading infections, are still considerable.

An Experiment by Civil Servants.

Rather more than a year ago a new society was formed called the East of Scotland Civil Service Association. It was registered as a limited company not for profit and the membership was at first restricted to 1500, but at a very early stage this limit had to be raised by another thousand. Though the members are scattered from the Orkneys to Portsmouth the vast majority of them live within 20 miles of Edinburgh. The association runs a nursing home which reflects great credit on the management. No doubt the special conditions of the Civil Service make possible many economies that might be beyond the powers of a mixed community—for example, the method of collecting annual subscriptions through the salary warrants, and the immediate availability of skilled administrators both medical and lay. But the main fact is that the nursing home has been proved to serve its purpose, which is to secure first-class surgical and

gynæcological treatment at fees within the range of the various grades of civil servants. During the year 148 members' cases, involving 122 operations, have been admitted, besides 25 non-member cases. Among member patients there were 39 operations for enlarged tonsils and adenoids and many other minor complaints were dealt with, but there were also many major operations and a number of medical cases were admitted, some for consultation. Twenty-eight X ray examinations and ten cystoscopies were made. As might have been expected, there was a deficit on the first year's working, but the revised terms will wipe this out without much difficulty. The association is to be congratulated on the success of a new and very important experiment in what is essentially a scheme of medical and surgical insurance. This type of paying hospital seems to have solved the difficulties of one large section of the community.

A Course on Heredity.

The Edinburgh School of Social Study and Training has been fortunate in securing a course of six lectures from Dr. F. A. E. Crew, director of the Animal Breeding Research Department, Edinburgh University. Some of us are old enough to have watched the transformation that Darwinism effected in biology as taught in the universities, and were therefore young enough to take quite seriously Weismann's "non-inheritance of acquired characters" and to follow the Spencer-Weismann controversy on the "all-sufficiency of natural selection." Thus we find it peculiarly stimulating to watch the young giants of the Mendelian era in their efforts to displace generalisation by the results of experiment. One of the great misfortunes in scientific history was that Mendel and Darwin did not know each other, and it is impossible even to guess what Darwin would have said about Mendel and his work. Thanks, however, to Bateson and his many brilliant successors, this generation does not lack exponents, and we welcome every attempt to make the new results an open book not to medical students only, or to the strictly scientific students, but to health visitors, nurses, and others interested in social affairs. Dr. Crew's course ought to be largely attended. He will discuss the mechanism of organic inheritance and of sex-determination, the inheritance of physical and mental characters in man, inbreeding and outcrossing, and the application of genetic facts to social and racial problems. At a moment when the problem of the feeble-minded is exciting world-wide interest it is gratifying that at least one school of social study offers a platform to the worker in pure and applied biology.

The Veterinary Services.

To judge by newspaper reports of the annual meetings of the two Scottish veterinary colleges there seems to be a good deal of feeling between East and West. What the merits of the case are I do not know, but it is certain that in recent years veterinary education has enormously improved, and it can now be fairly said that the training of veterinary officers is grounded on a well-proportioned curriculum of scientific studies. Recent developments under the Ministry of Agriculture—which still has jurisdiction in Scotland so far as animal diseases are concerned—have made a considerable number of openings for young graduates, and the Milk and Dairies Act and Tuberculosis Compensation Order have led to the appointment of a relatively large number of whole-time officers. It will be interesting to see whether the effects of the Compensation Order will include a drop in the rates of human tuberculosis of all kinds. The next ten years should provide a real test of the theories about milk infection.

Scarlet Fever.

In his bulletin for May, 1926, Dr. A. S. MacGregor, medical officer of health for Glasgow, writes: "Both scarlet fever and diphtheria are somewhat more prevalent this year; in fact, scarlet fever appears to be increasing in incidence from year to year since 1915." Certainly the incidence for September and October up to date shows a distinct increase over the corresponding months of last year, but the climax usually comes about this time, and the next week or two will show whether this is to be accounted an exceptional epidemic. The weekly scarlet fever incidence for the large towns as a whole is not yet quite so high as it was in September, 1925.

PARIS.

(FROM OUR OWN CORRESPONDENTS.)

Professional Donors of Blood.

SOME leaders of the medical profession in Bordeaux propose to set up a service of blood transfusion for the local hospitals. A report presented to the Medico-Chirurgical Society sets out the ever-present need in hospitals of professional donors, who may be adult subjects chosen from the medical personnel (internes, externes, students), from the hospital attendants, or at need from a larger public. Since donors must be easily accessible a list of them is to be permanently posted in the bureau of the hospital with a daily rota of names. The suggestion is that donors should be examined every three months by the laboratory chief, only those of group 4, so-called universal donors, being retained. Experience having shown that loss of blood to the extent of 500 c.cm. is harmless, this amount is to be asked of each donor not oftener than once a month, the donor having the right to five days' complete rest after a bleeding. For the four hospitals of Bordeaux the number of remunerated donors required is estimated at 15, a number which would be enough to ensure 10 to 20 urgency transfusions a month. Non-urgent transfusions can be arranged with voluntary donors selected from the patient's immediate circle on the ground of compatibility.

Ætiology of Abortion.

Although abortion with intent may constitute a large group in certain circles, any tendency should be avoided to exaggerate its prevalence or to include in the intentional group all abortions of unknown origin. Dr. Henri Vignes, accoucheur to the Paris hospitals, in a recent study of the ætiology of abortion, finds that syphilis constitutes a not inconsiderable group, while numerous other factors come into play. Many abortions are due to disease of the ovum or of the other products of conception. There is a pathology of the embryo and a pathology of the fœtus, and as far as present knowledge goes the cause escapes us in a considerable number. Out of 530 abortions Brion only found a well-defined cause in less than a third of the cases—namely, faulty insertion of the placenta, 62; syphilis, 52; albuminuria, 27; hydramnios, 13; uterine malformation, 7. In 367 cases the cause could not be ascertained.

Diuretic Action of Quinidine.

Quinidine, employed to regulate cardiac arrhythmia or paroxysmal tachycardia, seems to have another effect so far unrecognised—namely, a diuretic. Dr. Labbé (Paris) in administering the drug in old persons—predisposed, it is admitted, to polyuria—has found that quinidine is apt to cause troublesome diuresis, which stops when treatment is discontinued. Quinine and quinidine in febrile patients accelerate the heart's action without vaso-constriction, with a resulting increase in blood pressure, and in subjects possessing normal function an increase in excretion of urine, but Dr. Labbé's old persons were not febrile. The fact that quinidine gives rise to diuresis, although unexplained, should be noted as it may have useful application.

Glycosuria and Diathermy.

Dr. Bordier (Lyon) has reported in the *Archives d'Electricité Médicale* the case of a young man of 20, two years diabetic (9·75 g. glucose in 2500 c.cm. urine per day) in whom the glycosuria, polydipsia, and asthenia all disappeared a week after the application of diathermy by d'Arsonval's method, a current of

3200 milliampères being given for periods of half an hour repeated six times. There is reason to suppose that high-frequency oscillations may give rise to some modification in the islands of Langerhans, where the internal secretion of insulin takes place, but the result could also be explained by direct action of the current on the liver.

Health Conditions at Madagascar.

Prof. Koun, assistant director of the medical school at Antananarivo, reports that the natives of Madagascar have high fecundity, which is counteracted by high morbidity and mortality, due especially to respiratory affections, malaria, and plague, which assume great virulence. The environment is characterised by marked and sudden climatic changes and modified bacterial virulence, as well as the pathogenic effects produced by infection. The native medical organisations are too individualistic and modern methods are deplorably neglected. Penalties for violations of sanitary regulations are not enforced. Spirochætoses frequently constitute troublesome complications, and most diseases develop in the presence of pre-existing malaria.

New Theory of Anaphylactic Shock.

At a recent meeting of the Académie des Sciences, A. Lumière and J. Enselme presented the results of studies in anaphylaxis made in guinea-pigs. The authors advance the theory that anaphylactic shock is produced by irritation of nerve-endings in the vascular wall, induced by contact with flocculated particles formed when the releasing substance meets the sensitised serum of the patient. For preventing the shock the authors reason that anæsthesia of the vascular nerve-endings in question should prove effective. They have supported this deduction by experiments with allocain hydrochloride. The anæsthetic effect, however, wholly disappears in two hours.

The prefect of police has decided that the Paris milk-supply must be distributed preferentially, and first of all to retailers in the local quarters of Paris; hotels, cafés, and similar establishments are to have only secondary consideration. This step has been adopted in order to assure a sufficiency of milk to French families and regular residents of Paris. The general and municipal councils of Paris are considering with much solicitude the ever-rising price of milk and the inadequacy of the supplies provided for Paris. The problem is becoming urgent, and seems to demand limitation of the exports of butter, cheese, and similar dairy products.

The free clinics in and about Paris, closed during the past few months of the summer, are again opening for the autumn. A few post-graduate courses have already started, and for students acquainted with clinical chiefs and assistants in the various Paris hospitals the opportunities for practical clinical study are very numerous and valuable. Apart from all formal connexions with the hospital advantages, graduates and undergraduates can always find an abundance of opportunity and material at Paris, provided they speak and understand a modicum of French.

On Oct. 9th a large group of Polish surgeons arrived at Paris to attend the Thirty-fifth French Surgical Congress, and were received at the Faculté de Médecine under the auspices of the well-known Bienvenue Française.

MATERNITY AND CHILD WELFARE CENTRE AT SHEFFIELD.—Sir Kingsley Wood, Parliamentary Secretary to the Ministry of Health, has laid the foundation-stone of a maternity and child welfare centre which is to be erected, at a cost of £20,000, upon a site at the rear of the Cutler's Hall. There will be a waiting-room to hold 300 persons, and a shop for the sale of such foods as the doctors order. The building is being made of concrete blocks. The attendances at the present clinic are nearly 1000 a week, and since maternity and child welfare work began in 1900 the infantile death-rate of Sheffield has been halved.

Correspondence.

"Audi alteram partem."

PEPTIC ULCER AND CANCER OF STOMACH.

To the Editor of THE LANCET.

SIR,—What is the relationship between the round ulcer of the stomach and cancer of the stomach? Too much, perhaps, has already been written about this question, but since a great many authors and very many surgeons stick to the idea that many carcinomata ventriculi develop in peptic ulcers I feel compelled to ask them to reconsider their opinion.

In approaching the question we must be sure about our known quantities. Ulcer of the stomach is a word which covers very different things. It may mean an anatomical condition—that is, just the defect in the wall of the stomach without any manifest disease. In this case the ulcer is only found post mortem. On the other hand, the term is applied to the disease of a man who vomits hyperacid masses, has epigastric tenderness, and has pain at a certain time after meals. If he dies from an intercurrent disease his gastric mucosa is, perhaps, found intact. Thirdly, a man, 35 years old, with a two years' history of gastric trouble, has signs of pyloric obstruction; the acidity is normal; X ray shows a Haudek niche, and the resection of stomach reveals a carcinoma. What happens if the term ulcer is used for three things so different? Even with carcinoma there are enough difficulties to make conclusions useless when no post-mortems are performed and when no reasonable microscopical study of the resected specimen is made. The more experienced people are, the more they realise the difficulty of deciding at operation or post-mortem whether they are handling a carcinoma, which became ulcerated, or a callous ulcer.

Since the diagnosis of the two conditions is so fallacious, it is hard to establish causal relations between them, covering years, and involving data given by the patient. The simplest way to solve the problem is, of course, just to *assert*, to *affirm*, that many ulcers become cancerous in the stomach; and this way has been more successful than any other in impressing the medical world. The evidence furnished instead of proof are the specimens of ulcerated cancers from patients with or without a long stomach history. It is more a matter of psychology than purely a medical question. We all want to know, we all feel unhappy not to know, the origin of cancer. Now people claim to have found the root of the most frequent cancerous disease, and certainly most of us like to believe them and we do so.

If it were true that many peptic ulcers become cancerous, the part of the stomach which is the preferred seat of ulcer should be the site of election for cancer also. For the stomach itself this question is not easily answered because we see too seldom the early carcinoma which alone permits exact localisation. But ulcers are very frequent in the first part of the duodenum, and are similar if not identical with gastric ulcer. Where are the cancers into which these ulcers degenerate? Carcinoma of the upper part of the duodenum is extremely rare and it would be difficult to explain this if ulcer really breeds cancer. Secondly, in spite of all statistical difficulties, it cannot be denied that the peptic ulcer is much more frequent in certain towns and countries than in others; but the statistical reports of cancer of the stomach give no parallel to this geographical distribution. They ought to do so if it is true that cancer develops from ulcer. Diagnosis and treatment of peptic ulcer have been improved by clinical work, by standardisation of diets, by X ray, and by surgery. A decrease in the frequency of gastric carcinoma might therefore have been expected, but there has been no such decrease. It would be reasonable, furthermore, to expect that

cases treated by gastro-enterostomy would later on show a higher incidence of cancer than those in which resection had been done. Yet *statistics do not show* this higher incidence.

When we find an old ulcer which microscopically also is a simple callous ulcer all around and no scirrhous cancer, and when in one edge of this ulcer a small area of adenocarcinoma is found, then we are in the presence of a cancer developing from an ulcer of the stomach. Cases like this are described beyond any doubt but their number is small, and the diagnosis is difficult. If we accept only these cases as derived from ulcer then the percentage of ulcers which become malignant is very low—much lower than the 5 per cent. which are admitted even by those who do not favour the idea that cancer develops from ulcer.

But since it is true that carcinoma may develop in an ulcer and later invade and replace the ulcer, an attempt must be made to make a diagnosis from the history. The rule is that a long history of stomach trouble in an older person points towards ulcer, while a shorter history is suspicious of malignancy. This rule is good but its importance seems to have been overrated. Many cases have been reported in which after years of gastric disease carcinoma has been found, and they are used to support the theory that ulcer creates cancer.

But what do we know about the speed of growth in the manifold types of carcinoma in the stomach? Perhaps the man was right who said "Cancer of the stomach is a tragedy of which we see only the fifth act." Not seldom is a carcinoma found at autopsy in the stomach of a patient who never had any symptom of it, and reports from good hospitals put the average of unrecognised cancers of the stomach as high as 20 per cent. Can a stomach cancer stop growing for a while and continue later on; or, at least, cannot it stop making symptoms and start again?

Anschütz and Konjetzny [1] say that a history of two years does not yet speak against carcinomatous origin, and Dr. Theodor Plaut [2] has published cases showing the long duration of symptoms due to cancer. The previous history cannot be relied on to show if there has been an ulcer or not; nor can we rely upon the acidity findings, since too many cancer cases have normal HCl for a long time, and many ulcer cases show no hyperacidity. The periodicity of pain and its relation to food ingestion have also lost a large part of their significance in ulcer diagnosis. Perhaps they are symptoms of a localised stomach lesion only, and the fact that there is a circumscribed lesion at a certain point is as active in bringing out the symptoms as the character of the lesion.

A tumour in the cerebello-pontine angle is a clinical entity, and whether it is an endothelioma or a glioma does not make much diagnostic difference. In a smaller degree the same is true in the stomach, since the different agents—the cancer, the ulcer, the unknown ætiological factors in nervous conditions—can produce very similar clinical pictures. All this means that probably many so-called ulcer cases which ended in cancer have been cancer from the beginning. We have learned that the symptoms which an ulcer causes largely depend upon the constitution of the patient, the question arises if it is not the same with the small carcinoma, whether ulcerated or not.

The real frequency of cancer of the stomach will only become known when we have a complete autopsy of every patient.

I am, Sir, yours faithfully,

ALFRED PLAUT, M.D.

New York, Sept. 19th, 1926.

[1] Anschütz and Konjetzny: Die Geschwülste des Magens, see Deutsche Chirurgie, 1921, Nos. 46 ff.

[2] Plaut, Th.: Archiv. f. Verdauungskrankheiten, 1922, No. 29.

SCOTLAND AND VENEREAL DISEASES.

To the Editor of THE LANCET.

SIR,—In your editorial postscript which follows Mr. Wansey Bayly's letter in THE LANCET of Oct. 9th, you state "It is open to a local authority to submit any proposals for personal prophylaxis, and, if any such proposals had been made, the Board's reply would, no doubt, have been available in a public form."

On April 26th, 1924, a joint committee of local authorities in Scotland intimated to the Board "their unanimous opinion that legislation is urgently required whereby . . . . the existing prohibition of the sale of disinfectants is removed so as to permit qualified chemists to sell *ad hoc* disinfectants in appropriate form and with suitable instructions for use." The Board's reply is not "available in public form" for the very good reason that the Board have not condescended to reply at all. To maintain a dignified silence is a comparatively easy, if cowardly, way of shirking a difficult subject. The Board have likewise failed to say Yes or No to the plea for compulsory notification and treatment of venereal diseases put forward to them in March, 1925, by a conference representing one-third of the population of Scotland.

These unpleasant facts do not in any way detract from the general value of the "Pamphlet on Venereal Diseases" recently published by the Board. They merely go to prove that the views of local authorities and the opinions of the medical member of the Board and of one of their medical officers (both definitely in favour of personal prophylaxis) are flouted by the lay majority on the Board from motives of political expediency.—I am, Sir, yours faithfully,

Glasgow, Oct. 20th, 1926. ROBERT FORGAN.

INJECTION TREATMENT OF VARICOSE VEINS.

To the Editor of THE LANCET.

SIR,—I thank you for the sympathetic reference in your annotation of Sept. 25th (p. 661) to my article on the injection treatment of varicose veins in the *Ugeskrift for Laeger*. My lecture has since appeared in English with additions in *Acta Chirurgica Scandinavica* (vol. lx., Fasc. iv.–v., p. 436). I feel sure that this treatment will be of great importance, especially as regards the sequels of the disease, chronic ulcers and eczemas. Up till now I have treated 600 cases, and for the last four months I have been using a new technique *without any complications at all*. I am proposing to deliver a lecture on these new cases in the Medical Society of Copenhagen on Nov. 2nd, which will be published shortly afterwards in the *Ugeskrift* and probably later in English in the *Acta*. I consider it of some importance, for the good results of the treatment, that my latest experiences and improvements of technique should be known by surgeons intending to use the method.

I am, Sir, yours faithfully,

Oct. 21st, 1926. V. MEISEN,
Surgeon-in-Chief to the Policlinic of Copenhagen.

ANÆSTHETICS IN UROLOGY.

To the Editor of THE LANCET.

SIR,—I admit that Dr. Speid Sinclair has cause to complain of some remarks of mine published in the Transactions of the Royal Society of Medicine. They were made in a jesting spirit at the tradition which dictates the routine use of chloroform, and were never intended for publication as they made no contribution towards the scientific work of the meeting. I confess that I am as surprised as Dr. Sinclair must have been to see them in print. The proof of my remarks was carefully revised by the Assistant Editor and myself and the small slip containing the words to which Dr. Sinclair rightly objects, and for which I make an apology, entirely escaped our notice.

I am, Sir, yours faithfully,

Oct. 23rd, 1926. FRANCIS E. SHIPWAY.

"OSTEOCLASTOMA."

To the Editor of THE LANCET.

SIR,—In regard to the annotation in THE LANCET of Oct. 16th, on malignant myeloid sarcoma, we should like to make it clear that the proposal to drop the various terms now in use for this tumour in favour of the name "osteoclastoma" is the suggestion of Prof. M. J. Stewart of Leeds, who has been using this term regularly in class and for routine reporting for some years, and suggested it to us in the first instance. The view that these growths are essentially polymorphous-celled sarcomas which differentiate on the one hand into fibroblasts, and on the other into giant cells, which are the analogues of the osteoclasts, was also originated and developed by him (THE LANCET, 1922. ii., 1106).

We are, Sir, yours faithfully,

ERNEST FINCH.
HUMPHREY H. GLEAVE.

Pathology Department, University of Sheffield, Oct. 22nd, 1926.

INTERNATIONAL SANITARY CONFERENCES.

To the Editor of THE LANCET.

SIR,—A few errors have crept into the article entitled the Twelfth International Sanitary Conference, published in your issue of Oct. 9th, and perhaps you will permit me, in the interests of accuracy, to correct them. First, the Conference just held was not the twelfth but the thirteenth in the series, as shown by the following list of such Conferences: Paris, 1851 and 1859; Constantinople, 1866; Vienna, 1874; Washington, 1881; Rome, 1885; Venice, 1892; Dresden, 1893; Paris, 1894; Venice, 1897; Paris, 1903, 1911–12, and 1926. Secondly, the Sanitary Convention of this year is not the sixth to be signed, as stated, but the ninth. The others were: Paris, 1851 and 1859; Venice, 1892; Dresden, 1893, Paris, 1894; Venice, 1897; Paris, 1903 and 1912. Thirdly, the first Conference was held in Paris in 1851, and not in 1854 as stated in the article.

I am, Sir, yours faithfully,

Ealing, W., Oct. 23rd, 1926. F. G. CLEMOW.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Comdrs. W. C. B. Smith and M. T. Male are placed on the Retd. List with rank of Surg. Capts.

Surg. Lt.-Comdr. (D.) F. Thompson is placed on Retd. List at own request.

E. E. Malone, T. B. Lynagh, and C. F. Lynch to be Surg. Lts.

ROYAL ARMY MEDICAL CORPS.

Capts. to be Majs.: T. I. Dun and O. J. O'B. O'Hanlon.

Temp. Capt. J. Grant-Johnston relinquishes his commn. and is granted the rank of Capt.

TERRITORIAL ARMY.

Maj. W. A. Valentine and Maj. E. L. D. Dewdney, having attained the age limit, are retd. and retain their rank with permission to wear the prescribed uniform.

ROYAL AIR FORCE.

Flight Lt. H. McW. Daniel is promoted to the rank of Squadron Leader.

Flying Officer A. Harvey is promoted to the rank of Flight Lt.

INDIAN MEDICAL SERVICES.

Lt.-Col. H. P. Cook, on return from leave, has been posted as Civil Surgeon, Fyzabad. Dr. Badri Datt Punde has been posted as Civil Surgeon, Mainpuri. Dr. Ram Charan Lal has been posted to Bareilly. The following postings in the Provincial Medical Service have taken place: Dr. Prahlad Narain Mathur to Dehra Dun from Fyzabad. Dr. Brij Ratan Jain from Nagina, Bijnor, to Sultanpur. Dr. Kashi Prasad Bhatnagar from Chamoli, Garhwal, to Hardoi. Dr. Chiranji Lal from Lalitpur to Hamirpur. Dr. Narain Das Banerji from Dehra Dun to Bahraich. Dr. Jagdish Narain Gupta from Bahraich to Lucknow. Dr. Rasik Behari Lal from Hardoi to Mirzapur. Dr. Rameshwar Singh from Mirzapur to Muttra.

Dr. P. N. Chatterji, district medical officer of health, Moradabad, officiates as Assistant Malaria Officer, United Provinces. Col. C. J. O'Gorman, D.S.O., officiating D.D.M.S., Eastern Command, has left India pending retirement. The appointment of Maj. Seymore Sewell as Director of the Zoological Survey has been confirmed. Maj. N. D. Puri has been transferred permanently to the Punjab for employment in the Jail Department.

DEATHS IN THE SERVICES.

The death of Maj.-Gen. Sir Charles S. Ryan is announced in a telegram to the *Times*. He was a passenger in the *Otranto* from England, and died while the ship was berthing at Adelaide on Oct. 23rd. Sir Charles Snodgrass Ryan was born in Melbourne in 1853 and was first educated at Melbourne Grammar School. He qualified with the M.B., C.M. Edin. in 1875, and continued his medical studies in Paris and Vienna. In 1876–78 he served in the Turkish Army as surgeon throughout the Turko-Serbian war and the Russo-Turkish war, including the sieges of Plevna and Erzerum, and was the only Englishman to go through the siege of Plevna on the Turkish side (Order of the Medjidieh and Osmanieh). He had held the posts of senior surgeon to the Melbourne Hospital and lecturer on clinical surgery and examiner in surgery at the University of that city, while he was honorary physician to the Governor-General of Australia. During the Great War he was A.D.M.S., 1st Australian Division, at Anzac, France, and England, and was afterwards consulting surgeon to the Australian Imperial Force. In 1922 he revisited the scenes of his student days at Bonn and brought back an interesting account of German prosperity in the Rhineland, which was published in the *Times* of May 29th, 1922. He married, in 1883, Alice, daughter of the Hon. Theophilus Summer, of Victoria, who predeceased him in 1923.

Obituary.

CHARLES CLEMENT LAPAGE, M.D. CAMB., M.R.C.S. ENG.

Dr. C. C. Lapage, who died on Oct. 14th at Dolywern, near Chirk, at the age of 75, had retired from practice some years ago and had gone to live at Manchester with his son, Dr. Paget Lapage. He was educated at Leeds Grammar School and was a scholar of Magdalene College, Cambridge, where he read mathematics before taking up medical work. On going down from the University he returned to Leeds, and after qualifying in 1876 was appointed house surgeon at the Leeds General Infirmary. On going to live at Nantwich he built up a large practice and acted as consulting physician to the Brine Baths Hotel. He was also medical officer to the Voluntary Aid Detachment's Hospital, and became well known throughout South Cheshire as an examiner and lecturer in St. John's Ambulance work. In his university days Dr. Lapage was prominent in many forms of sport and he continued their pursuit as far as possible during his 42 years at Nantwich. He was well known in the hunting field. He was a widower, and leaves a daughter and five sons, two of whom are medical men.

WILLIAM GEORGE MARTIN.

THE death occurred on Tuesday, Oct. 19th, at the age of 75, of Mr. William George Martin, nearly 40 years associated with THE LANCET and for 25 years the head printer. He retired in 1915, and on the occasion a presentation was made to him by his colleagues at a farewell dinner, which was attended by the Editor and Assistant Editor, many old members of the staff, the head of THE LANCET Laboratory, and the chairman of the Company. To a large number of the older contributors of THE LANCET Mr. Martin was personally known, and it was not unusual for some of them to make their corrections and emendations under his eye, while for several years after his retirement, until failing health prevented him, he prepared the index of the paper. We have lost in him an old and valued friend.

Medical News.

UNIVERSITY OF OXFORD.—At a congregation held on Oct. 21st the degree of Bachelor of Medicine was conferred on W. H. Hudson and E. L. Fothergill.

Radcliffe Prize.—The next award for the Radcliffe Prize will be made in March, 1927. This prize of £50 is awarded by the Master and Fellows of University College every second year for research in any branch of medical science. It is open to all graduates of the University who have proceeded, or are proceeding, to a medical degree in the University. Candidates must not have exceeded 12 years from the date of passing the last examination for the degree of Bachelor of Arts, and must not, at the date of application, be Fellows on the Radcliffe Foundation. Candidates must send in their memoirs to the Secretary of Faculties, at the University Registry, on or before Dec. 1st, 1926. The award will be made in March, 1927.

UNIVERSITY OF CAMBRIDGE.—At examinations held recently the following candidates were successful:—

DIPLOMAS IN PUBLIC HEALTH AND HYGIENE.

James L. Dunlop (distinguished in Part II.), Bandi Ethirajulu, Neil E. Goldsworthy (distinguished in Part I.), Riad Abdel Noor Henein, Farid Hilmy, Bertha H. Lawler, Wasfy Omar, Harold B. Porteous, Trilok Chand Puri, John S. Smith, Margaret A. C. Symon, and Abdul Wahid el Wakil (distinguished in Part II.).

UNIVERSITY OF EDINBURGH.—At a graduation ceremonial held on Oct. 23rd the following degrees and diplomas were conferred:—

M.B., Ch.B.—Arthur Ian Barron, Oswald Dennis Beetham, Henry Caplan, Christopher William Clayson (in absentiâ), Basil George Tonge Elmes, William Andrew Erskine, Alexander Thomas Forbes, William Graham Hardie, James Donald Horsburgh, Walter Dalgleish Jackson, James M'Lauchlan Johnston, James Johnston Mason, David Olumide Peters, George Phillips, Edwin Moody Robertson, Percy Mitchell Scott, Philip Seager, Edward Morton Sewell, and Hugh Somerville.

D.P.H.—Frank Allardice, James Currie Baxter Craig, Andrew Isaac Messer, John Barré de Winton Molony (in absentiâ), Archibald Colin Murray (in absentiâ), Agnes Frances Turner.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—At a meeting of the College held on Oct. 20th Dr. Arthur Logan Turner was re-elected President for the ensuing year, Sir David Wallace, Vice-President, and Mr. Alexander Miles Secretary and Treasurer.—The following 36 successful candidates, out of 83 entered, who passed the requisite examinations between July 12th and 19th were admitted Fellows:—

Arthur W. Allum, Robert Armstrong, William E. Barnie-Adshead, Kashinath Dattatraya Bhave, George S. A. Bishop, Alexander Callam, Richard E. D. Cargill, Joseph R. Cornish, Douglas R. Cramb, Alexander Gillies, Keith H. Gillison, William T. Graham, Richard J. B. Hall, Harold A. H. Harris, Coimbatore Venkataramana Krishnaswami, George E. Larks, Eugene G. Lynch, Charles S. Macdougall, William B. McKelvie, Joseph A. Maxwell, Brooke Moore, Horace W. Nash, Reuben W. Payne, John H. Pilkey, John L. R. Plimmer, Walter J. Robertson, Pieter Roux, James Scott, Thomas Sprunt, John P. Stewart, Soo Hock Tan, Patrick A. Treahy, Ivan A. Tumarkin, John R. Wells, Thomas A. Weston, and Lincoln M. Zinck.

UNIVERSITY OF GLASGOW.—The following medical degrees were conferred on Oct. 18th:—

M.D.—Ian Murray (with high commendation), Andrew Davidson, Peter R. M'Naught, and Patrick J. O'Hare.

M.B., Ch.B.—With honours: Herbert H. Pinkerton, George Armour, and Robert B. Smith. With commendation: John Black, Alexander B. Smith, David F. Anderson, Donald Chisholm, Charles E. B. Lynch, and William G. MacKay. Ordinary Degree: William Allan, James C. Baird, Percy M. I. Baird, Richard R. Barr, Harold Barton, James Binnie, Alexander M. Brown, David W. Buchanan, William A. Burnett, John Burns, Robert A. Campbell, David D. Clarke, Martha Cleland, William Clement, Edward A. M'Millan Connal, Archibald Cumming, David M. Cunningham, Jackson C. Cuthbert, Joseph Dunn, Alfred Esterman, Alexander C. Ewing, Jessie A. Flett, Dorothy M. Forsyth, George Gemmill, Charles Gilmour, Margaret A. Glass, Max Gorfinkel, Mary G. Gorrie, Charlotte A. Gunson, John Hzmilton, John A. Kemp, Hugh R. Kidd, James E. W. Lee, David P. Leiper, Simon R. Lipchinsky, Robert Logan, Samuel Lurie, Donald MacCullum, Robert H. B. M'Crae, Mary L. M'Gregor, Murdoch MacGregor, Colin C. M'Kenzie, William G. MacLean, Thomas H. M'Owat, Mungo Manderson, Joseph Margolves, Alexander G. Mearns, Isabella A. Milne, Louis Morrison, George M. Muirhead, James G. Murdoch, Moses Naftalin, John O'Hara, Ian M. Orr, William T. Rankin, Duncan M. Reid, Gilbert Rorison, John P. Semple, Gavin Shearer, Andrew Shepherd, Josephine W. Shepherd, George S. Sinclair, James L. Smith, Walter C. Smith, Eliza M. K. Stevenson, Murdoch G. Tallach, George R. Taylor, Andrew Thomson, Margaret T. Tindal, Henry Vost, Laurence A. Watson, William Wilson, John Wyllie, and Hamilton B. Young.

Herbert H. Pinkerton gains the Brunton Memorial Prize awarded to the most distinguished graduate in medicine of the year 1926; and Stuart I. A. Laidlaw gains the West of Scotland R.A.M.C. Memorial Prize awarded to the candidate with the highest aggregate marks in the final examinations for the degrees of M.B. and Ch.B. held during 1926.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, ROYAL COLLEGE OF SURGEONS OF EDINBURGH, AND ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—The following candidates have passed the Triple Qualification Examination:—

FINAL EXAMINATION.

William G. H. Allen, Oswald D. Beetham, Paul R. C. Peterson, Norman M. Eadie, Arthur G. Farquharson, Armitage E. F. L. Forbes, Wilfred L. G. Jewitt, Samuel A. B. Hosang, John A. Mains, Thomas A. P. Wynter, David Zimmerman, James G. Currie, Kudyar Marimuthu Rama Swami, Gerald M. Fox, Robert D. Kerr, James V. O'K. Murphy, Bodiyabaduge William Perera, Canagasaby Gurusamy, Henry B. Martin, Don B. J. de Silva, Horace S. Kent, Raynhild B. Werden, Myer B. Stungo, Bartlet S. Ellis, James Hendry, Alexander S. Pool, Jose Joaquim Sant' Ana Furtado e Souza, Charles H. A. S. B. Panlickpulle, Soundranayagam W. Charles, and Arleigh W. Scott.

Medicine.—Daniel J. McKenna, Ronald A. Paton, Donald Ross, Edward P. Kelly, Sarukkali Patabendige Bandulasena Gunawardena, Bennet A. van der Gert, Samson Amarasiri Gunawardana, Eric A. Y. MacKeown, and Patrick J. Bourke.

Surgery.—Adam S. Gordon, John G. Buchanan, Aly Kouchouk, Siva Ratnam Carthegasam, and Alexander R. Cowan.

Midwifery.—John D. Cooper, Don Francis Jayamaha, Kanakkumar Dhar, Ronald A. Paton, Samuel Caller, Donald Ross, Abram B. Gilston, Lucy W. MacDougall, Elizabeth Bell, Bennet A. van der Gert, Samson Amarasiri Gunawardana, Aly Kouchouk, Hector T. J. Abeyesundere, Lamahewage Martin de Silva, Patrick J. Bourke, Siva Ratnam Carthegasam, John E. Mulholland, Kanailal Palit, and Alexander R. Cowan.

Medical Jurisprudence.—Henry C. Duncan, Don Francis Jayamaha, Alexander Lipschitz, Jamieson T. F. Pearse, Walter Campbell, Matthew Clayton-Mitchell, William Ainslie, Clarence E. Vaz, Samuel Caller, Robert R. MacGibbon, Mary E. J. Magee, and Lionel M. Green.

Public Health.—Jessie G. Service, George J. Bastible, Coenraad L. Pieters, Robert Cruickshank, Flora MacDonald, Ralph S. Begbie, Alexander Lundie, Reuben Levinson, Alexandra M. MacCormick, and Ruth M. Allison.

Part I.—George M. Millar, Lillias E. B. Buchanan, John W. Starkey, Charles K. Robertson, Jean R. Mason, Philomena R. Whitaker, and John Douglas.

UNIVERSITY OF LONDON.—At a meeting of the Senate held on Oct. 20th Mr. Percy Stocks, M.D., D.P.H. Camb., M.B. Manch., was appointed as from August 1st last to the University Readership in Medical Statistics tenable at University College. Dr. Stocks took first place in the natural science tripos at Cambridge in 1909, and in 1911 obtained a medical scholarship at the University of Manchester. He served during the late war as regimental officer in the Royal Army Medical Corps (1915–16) and bacteriologist in research laboratories (1917–18). From 1918 to 1920 he was acting school medical officer for the Bristol Education Committee and was later appointed senior assistant school medical officer. Since 1921 he has been medical officer to Galton Laboratory, and since 1924 lecturer in vital statistics and epidemiology at University College.—The Senate passed a resolution recording its high appreciation of the work of Sir Cooper Perry as principal officer of the University and giving its cordial thanks to him for his conspicuous services.

University College Hospital.—Three lectures on the History of Medicine will be delivered at University College Hospital Medical School by Dr. Charles Singer on Fridays, Nov. 5th, 12th, and 26th, at 4.15 P.M. The subjects will be: (1) The History of Scarlet Fever, (2) The Sweating Sickness, and (3) Some Points in the History of Hygiene.

HARVEIAN SOCIETY OF LONDON.—An ordinary meeting of this society will be held at 11, Chandos-street, W. 1, on Thursday, Nov. 4th, at 8.30 P.M., when a discussion on the Management of Labour with Contracted Pelvis will be opened by Mr. Aleck Bourne, followed by Mr. Eardley Holland, Mr. Clifford White, and others.

BEIT FELLOWSHIP IN TROPICAL MEDICINE.—The trustees of the Beit Memorial Fellowships are considering the appointment, at a salary of £1000 a year, of a Fellow who shall undertake research in the tropics for a period of five years. Application must be made before Feb. 1st to Sir J. K. Fowler, at 35, Clarges-street, W. 1.

MEDICO-LEGAL SOCIETY.—The attention of members of this society is drawn to the alteration in the day of the month fixed for meetings. In future the meetings will be held on the fourth Thursday instead of the third Tuesday in every month, unless special circumstances render it necessary to make any alteration, when due notice will be given.

LLOYD ROBERTS LECTURE.—The Lloyd Roberts ecture for 1926 will be delivered by Dr. W. E. Gye at the anchester Royal Infirmary on Tuesday, Nov. 9th, at 15 P.M. The subject of the lecture will be An Outline the Knowledge Gained by the Experimental Study of ancer.

THE LATE DR. J. G. DUNLEA.—News has reached ork of the death of Dr. John Gerald Dunlea in Malaya on ept. 13th. Dr. Dunlea graduated in medicine at the ational University of Ireland in 1921, and joined the alayan medical service about two and a half years' ago. e had recently been in charge of the Batu Gajah Hospital.

ROYAL NORTHERN HOSPITAL.—Prince Henry has onsented to be present at a festival dinner of the Royal orthern Group of Hospitals on Thursday, Nov. 18th, at for 7.30 P.M., at the Savoy Hotel. The dinner will com- emorate the seventieth anniversary of the hospital, and is hoped to raise money towards removing the burden debt under which it is working.

LEAGUE OF NATIONAL LIFE.—This afternoon riday) at 3 P.M., is being held the first annual general eeting of the League at the Caxton Hall, at which the resident-elect, Dr. F. J. McCann, senior surgeon to the amaritan Hospital for Women, is delivering an address n the Dangers of Contraception. Speeches are also to be ade by Dr. Halliday Sutherland and Dr. Letitia Fairfield. ord Fitzalan of Derwent is to occupy the chair.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—At e annual meeting of the President and Fellows of the oyal College of Physicians, held on St. Luke's Day, Dr. . Henry Wilson was re-elected as President, and Dr. . P. C. Kirkpatrick as Registrar. The following were ected as Censors: In medicine, Dr. F. X. Callaghan and r. V. M. Synge; in midwifery, Dr. B. Solomons; and in edical jurisprudence, Dr. J. W. Bigger. Dr. Solomons as nominated Vice-President.

INSTITUTE OF HYGIENE.—A series of lectures on Vomens' Health is being delivered in the lecture hall of e Institute, 28, Portland-place, London, W., at 3.30 P.M., n Wednesdays until Dec. 1st. The lecturers are Dr. C. S. homson, Dame Mary Scharlieb, Dr. Harry Campbell, r. Leonard Hill, Lady Barrett, and Dr. James Fenton. he next lecture, on Nervous Disorders and Mental Hygiene, ill be given by Dame Mary Scharlieb on Nov. 3rd. number of seats are reserved for Fellows, Members, and ssociates of the Institute, but ample room is provided for thers, of both sexes, who are interested in health problems.

MEDICAL CONGRESS AT PRETORIA.—The twenty- rst annual congress of the South African Medical Association rought together a large gathering of medical men in the acfadyen Hall, Pretoria, on Oct. 4th. The South African entre of the British Medical Association has now been corporated in the South African Medical Association, and, President of the former body, Dr. A. J. Orenstein elcomed the first congress under the joint régime, and troduced the new President, Dr. A. W. Sanders, who livered an address entitled Generations to Come in which discussed racial degeneration and its causes. In con- xion with the congress there was a trade exhibition of edical and surgical accessories and products.

PEOPLE'S LEAGUE OF HEALTH.—The League has ranged a series of eight lectures on the Mind and What e Ought to Know About It, to be delivered in the lecture om of the Medical Society of London, 11, Chandos-street, vendish-square, W., beginning on Monday, Nov. 1st, at P.M. The following is a list of the subjects: Mind and dy (Dr. E. Mapother); Primitive Instinct (Dr. E. D. acnamara); Association of Ideas, Recognition, and emory (Dr. Neill Hobhouse); Mental Mechanisms (Dr. Crichton Miller); Habit and Adaptation (Sir Maurice aig); Fatigue and Sleep (Sir Robert Armstrong-Jones); ime and Delinquency (Dr. W. A. Potts); Mental Deficiency r. A. F. Tredgold). The fee for the course will be 10s. rther particulars may be had from Miss Olga Nethersole, e People's League of Health, 12, Stratford-place, W. 1.

The League has also arranged a series of eight tures on Diet: What We Should Eat and Why, be delivered in the lecture room of the Medical ciety of London, 11, Chandos-street, Cavendish- uare, W., commencing on Wednesday, Nov. 3rd, 6 P.M., when Dr. Harry Campbell will speak on the od of Mankind, Treated Historically and Geographi- ly. The other lecturers will be Dr. Leonard Hill (Nature d Purpose of Food), Prof. Winifred Cullis (Food in lation to Growth), Prof. W. E. Dixon (Common Poisons Daily Life), Dr. J. Lewis Rosedale (Common Errors in et), Prof. Hugh Maclean (Vitamins), and Dr. R. L. J. ewellyn (Rheumatism in Childhood). The fee for the ies will be 8s. The syllabus and further information y be had from Miss Olga Nethersole.

ROYAL LIVERPOOL BABIES' HOSPITAL.—The King has commanded that the Babies' Hospital at Woolton is to be known in future as the Royal Liverpool Babies' Hospital.

MANCHESTER MEDICAL SCHOOL.—The annual dinner of past and present students of this school will be held at the Grand Hotel, Manchester, on Thursday, Nov. 4th. Tickets (15*s.* 6*d.*) may be obtained from the secretary, S.R.C., the Medical School, Manchester.

RONTGEN SOCIETY.—A general meeting of this society will be held in the British Institute of Radiology, 32, Welbeck-street, London, W., on Tuesday, Nov. 2nd, at 8.15 P.M., when the President, Dr. N. S. Finzi, will give an address on Research in Radiology. A discussion will follow.

BRITISH SCIENCE GUILD.—The Norman Lockyer Lecture for 1926 will be given in the Goldsmiths' Hall on Tuesday, Nov. 23rd next, at 4 P.M., by Prof. J. S. Huxley, who will speak on Biology and Human Life. Tickets on application to the secretary of the Guild, 6, John-street, Adelphi, London, W.C. 2.

MEDICAL OFFICERS OF SCHOOLS ASSOCIATION.—A meeting of this association will be held at 11, Chandos-street, Cavendish-square, London, W., on Friday, Nov. 12th, at 5 P.M., when Dr. A. I. Simey will introduce a discussion on the Modification of the Rules Usually Observed in the Management of Infectious Diseases in Boarding Schools. Tea will be served at 4.30 P.M.

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.—There will be a special meeting of this association at the B.M.A. House on Monday, Nov. 15th, at 4 P.M., to hear a lecture by Dr. Alfred Adler, of Vienna, on the Cause and Prevention of Neurosis. All neurologists, psychiatrists, and other medical men interested in the subject, and also senior medical students, are cordially invited to be present.

THE LATE DR. C. T. GIBBONS.—The death is announced of Dr. Charles Telford Gibbons, of Kentish Town, London. He died at his surgery on Oct. 15th whilst attending to a patient. Dr. Gibbons, who was a student of the London Hospital and took the conjoint diploma in 1897, was 58 years of age, and had worked in Kentish Town for 30 years.

A Medical Prayer Union meeting will be held, by invitation of Dame Mary Scharlieb, at 71, Harley-street, London, W., on Friday, Nov. 5th, at 5.30 P.M., when an address will be given by the Rev. Hubert L. Simpson, on the Doctor and Religion. An intimation of intention to be present will be welcomed by the hon. secretary, Dr. Tom Jays, Livingstone College, Leyton, E. 10.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Thursday, Nov. 4th, at 5 P.M., at the Medical Society, Mr. C. Max Page will continue the series of lectures on "Surgical and Medical Emergencies" by speaking on "Observations on the Treatment of Fractures." These lectures are free to all members of the medical profession. On the same day at 1 P.M., Mr. M. L. Hepburn will give a demonstration in clinical ophthalmology at the Royal London Ophthalmic Hospital. At the Royal National Orthopædic Hospital on Nov. 1st Mr. E. Laming Evans will give a special afternoon demonstration starting at 3 P.M. Both these clinical demonstrations are free to all members of the medical profession. On Monday, Nov. 1st, a Practitioners' Course in general medicine and surgery will start at the Hampstead General Hospital. The daily sessions will take place from 4.30 to 6 P.M., and the course will last for two weeks. A clinical demonstration will be given for the first three-quarters of an hour, followed by a lecture. On the same day a course in venereal diseases will begin at the London Lock Hospital. There will be clinical work each day at the hospital from 1 P.M. onwards, and four or five lectures will be given weekly during the four weeks of the course. The following courses will also be held during November: at the Royal Waterloo Hospital for Children and Women a course in medicine, surgery, and gynæcology will start on Nov. 15th, lasting for three weeks and occupying every afternoon and some mornings; at the St. John's Hospital for Diseases of the Skin from Nov. 15th to Dec. 11th, including daily instruction in the out-patient department, and lectures on Tuesdays and Thursdays; at the West End Hospital for Nervous Diseases from Nov. 22nd to Dec. 18th, consisting of lecture-demonstrations daily at 5 P.M.; at St. Mark's Hospital from Nov. 22nd to 27th, including operations, demonstrations and lectures; and at the London Temperance Hospital from Nov. 29th to Dec. 11th, when the course will be in medicine and surgery, taking place in the late afternoons. Copies of all syllabuses, of the general course programme, and of the *Post-Graduate Medical Journal* may be had from the secretary of the Fellowship, at 1, Wimpole-street, London, W. 1.

BRITISH SOCIAL HYGIENE COUNCIL.—The Council has arranged a special course of lectures to teachers and those concerned with education, which is to be held at the lecture theatre of the College of Nursing, Henrietta-street, Cavendish-square, London, W. Mr. D. Ward Cutler, chief protozoologist at the Rothamsted Experimental Station, will open the course on Nov. 4th, at 5.30 P.M., with a lecture on the Contribution of Biology to Social Hygiene. On Nov. 11th Dr. W. M. Feldman will discuss the Contribution of Physiology to Social Hygiene; on Nov. 18th Dr. J. A. Hadfield will speak on the Contribution of Psychology to Social Hygiene; on Nov. 25th Dr. Mary Buchan Douie will give an address on the Adolescent and Social Hygiene, from the Standpoint of the Home; and on Dec. 2nd the course will end with a lecture by Prof. Winifred Cullis on the Adolescent and Social Hygiene from the Standpoint of the School. Free tickets may be had from the London Secretary, British Social Hygiene Council, Carteret House, Carteret-street, S.W. 1.

HOSPITAL AMALGAMATION IN BIRMINGHAM.—The Birmingham Hospital Council has approved a scheme to provide a new hospital centre, to which we refer on page 916. The centre will be under the control of the amalgamated boards of the General and the Queen's Hospitals, on a site adjoining the University, at Edgbaston, and will have a minimum of 750 beds. At present the General Hospital has 372 and the Queen's 224 beds, and the demand for further accommodation is already urgent. The population of Birmingham itself is practically 1,000,000, and within a radius of 30 miles there are 2,000,000 more people from whom there are heavy demands. The present deficiency of beds, taking the city alone, is between 600 and 800 for general medical and surgical cases, and it is calculated that by 1931 2400 beds will be required; the present total is 1800. The provision for out-patients is equally inadequate. The joint committee point out that the presence of the Medical Faculty of the University at the hospital centre would be highly advantageous, and that if the new hospital were not a teaching centre organically connected with the medical staff of the University it would not attain rank as a first-rate hospital It is hoped that the other Birmingham hospitals will eventually coöperate with the scheme.

ROYAL VICTORIA HOSPITAL, BELFAST. — On Wednesday in last week the Duke of Abercorn, Governor of Northern Ireland, opened the new extensions, which have cost £130,000. Every department has been improved or enlarged and the number of beds has been increased by 80 to a total of 436—152 medical, 202 surgical, and 49 for diseases of women; the remainder are reserved for special cases. There are now eight operating theatres, all the beds are provided with a special wheel to facilitate movement, and a large proportion are especially suitable for abdominal cases. The out-patient department comprises a new surgical clinical theatre and a new medical clinical theatre, each with dressing rooms, and new provision for the X ray department. An entire floor is given up to a very complete dental department with 18 chairs for conservation work, separate rooms for extractions, and recovery rooms in connexion with general anæsthesia. Much space is devoted to the manufacture of dentures, and there is a complete X ray installation for dental work only. This department forms the clinical portion of the recently established Dental School of Queen's University, Belfast. Another floor has been adapted as a clinic for eye, ear and throat diseases. At the opening ceremony Dr. J. A. Lindsay, professor of the theory and practice of medicine in Queen's University, who is chairman of the hospital, declared his conviction that the voluntary system is the most economical and efficient, and the best for the patient, the doctor, and the public.

THE STATUS OF VOLUNTARY HOSPITALS.—Speaking at the Coventry and Warwickshire Hospital last week the Minister of Health said that he had never believed that voluntary hospitals were bound, sooner or later, to be superseded by State- or rate-aided institutions. The public health could not, however, be treated in water-tight compartments, and it seemed to him that the time had nearly come to consider how the voluntary hospitals might be fitted into some scheme covering a wider field than had hitherto been formulated. These hospitals already received grants for certain purposes; was it not possible that coöperation of that kind might be extended? Could we not visualise a time when those responsible for the conduct of voluntary hospitals might be represented upon some central health authority upon which would rest the responsibility of the general hospital policy for the area? Might we not imagine that in return for a certain subordination of their complete and absolute freedom to do what they liked the voluntary hospitals might receive some further assistance than that which they got at present, and could we not imagine that under a system of that kind this central authority upon which the voluntary hospitals would be represented might, while laying down in the broadest possible outline the principles upon which questions like (let him say) extension or treatment should proceed, nevertheless should leave to each individual unit the widest possible freedom in the administration and conduct of its work? At the same time he assured his hearers that he had no legislation in his mind that need cause a moment's uneasiness to the voluntary hospitals.

TUBERCULOSIS CONFERENCE.—What is called a Tuberculosis Week-end has been arranged jointly by the Tuberculosis Society and the Society of Superintendents of Tuberculosis Institutions, and is to be held at the house of the Royal Society of Medicine, 1, Wimpole-street, London, W. from Nov. 19th to 22nd. On Nov. 19th, at 5 P.M., Dr. O. Strandberg, of the Finsen Institute, Copenhagen, will read a paper on the Treatment of Tuberculosis and particularly Tuberculosis of the Larynx by Heliotherapy and Artificial Sunlight. A discussion will follow. On the next day tours have been arranged to the King Edward VII. Sanatorium, Midhurst, and the King George V. Sanatorium, Milford, or to the Heatherwood Hospital for Surgical Tuberculosis, Ascot, and the Brompton Hospital Sanatorium, Frimley. Dr. L. S. Burrell will demonstrate cases at the Brompton Hospital on Monday morning and a lunch to the foreign guests will follow. At 3 P.M. Dr. P. F. Armand-Delille, of Paris, will speak on the Diagnosis of Bronchiectasis and Lung Cavities by Intratracheal Injections of Lipiodol, and there will be a discussion. The proceedings will close with a meeting at 5 P.M., when Dr. Georg Schröder, medical director of the New Schömberg Sanatorium Wurtemburg, will read a paper on Specific Stimulant Therapy and Protective Inoculation Measures. Visitors interested in these discussions and tours are invited to attend. Application may be made to Dr. F. J. C Blackmore, Tuberculosis Dispensary, Maxey-road, Plumstead, S.E. 18.

RHEUMATISM IN INDUSTRY.—A meeting of the Citizens' Council of the Federation of Medical and Allied Services was held in London on Oct. 26th, when a number of business men and doctors met to discuss the treatment of rheumatism in industry. Mr. Spedan Lewis took the chair and an address was given by Sir Thomas Horder who described in simple terms the principal features of rheumatic disease. The nutritional factor in the ætiology, he believed was generally underestimated, whilst too much stress was laid upon exposure. Cold was not so much important a damp cold. As preventive measures he suggested the maintenance of fairly dry atmosphere, ventilation, exercise and elimination of strain. Dr. Howard Mummery, medical officer to Messrs. Lyons, said that damp must be avoided in workrooms; it was often caused by washing floors. S also must chilling of the feet and lack of sunlight and ventilation, whilst employees should have suitable storing and drying rooms for their damp out-door clothes. Dental sepsis was of enormous importance and a clean mouth should be a condition of permanent employment. The treatment of rheumatic joints was still most unsatisfactory even i London. Lumbago and neuritis, he thought, were very amenable to treatment at factories by massage and electricity These were not available in panel practice and could l had at hospitals only with great loss of time to the worke After installing such treatment at factories he had found that cases no longer remained away from work for one two weeks—when they often claimed compensation fo alleged strain—but the patients were cured by two three brief applications whilst continuing their trad The treatment of rheumatic joints, however, could not l dealt with by single firms; coöperative effort was needed He hoped that an attempt would be made by several firms to found clinics for dealing with this type of chronic rheumatism. The cost would not be prohibitive and he suggested that a committee composed of business men and doctors should look into the question. Sir Thomas Neill said that the principle involved might land the manufacturer in providing treatment for all sorts of diseases. What was needed was information such as Sir Thomas Horder has given; it should be carried into places where people lived and worked. Mr. West advocated a contribution of a penny the pound by workmen—an equal sum being given by the employers. This would go towards the cost of hospital spa treatment. In his own industry, if 20 per cent. of coal miners asked for drying rooms and baths, owners would obliged to put them in, but the miners did not want such facilities. Dr. Saxby Willis, speaking as medical officer a large firm, said that the most valuable agent in preventing rheumatism was routine examination of everyone applying for employment, and especially examination of teeth and tonsils. Service should only be temporary till septic foci had been removed, for it was easier to apply the necessary coercion before the workers were accepted than afterwards. Treatment was of secondary importance. Emphasis was laid by Mr. Morris Salmon on the financial profit resulting from the establishment of medical clinics at factories. It was decided that a committee, as suggested by Dr. Mummery, should be formed to go into the question of clinics for arthritis.

DIPHTHERIA AT MARKET DRAYTON.—The isolation ıospital being full with patients suffering from diphtheria n this village, the Lyon Memorial Hall at Hodnet, Shropshire, s being adopted to receive infectious cases from the district.

MANCHESTER'S CIVIC WEEK.—The metallic badges or medals sold in the streets during Civic Week were bought by nearly a quarter of a million people. The sum thereby ealised was £2500, which will be given in aid of the nedical hospitals in Manchester and Salford.

LADIES' MEDICAL GOLFING SOCIETY.—The autumn neeting was held at Walton Health Golf Club on Oct. 26th, he members of the society being the guests of Lord Riddell. There were over 60 entrants for the various competitions, he results being as follows: Captain's Prize for net aggre-ate, spring and autumn meetings: Mrs. Lewis Smith. Best scratch score: Miss Edith Leitch (88). Senior Division: st: Mrs. Lewis Smith; 2nd, Lady Rigby. Second Division: st, Mrs. Jennings; 2nd, Mrs. de Paula. Third Division: st, Mrs. Gordon Holmes; 2nd, Mrs. B. Marshall. Eclectic f partners: Dr. Joan Ross and Mrs. Johnson. Greensomes: st, Mrs. R. Paton and Mrs. Nicholson; 2nd, Mrs. C. Fuller nd Mrs. de Paula.

NEEDS OF THE UNIVERSITY OF LIVERPOOL.—Lord Derby, as Chancellor of the University, made a statement n Oct. 19th to representatives of nearly twenty munici-alities and urban districts in Lancashire and Cheshire on he claims of the University for increased support from the ocal authorities of the area, with a view to developing some greed scheme of financial assistance from each town ending students to the University, possibly by a small harge on the rates. In the six years immediately following he war the annual expenditure of the University greatly xceeded the income, and there was a deficit of £63,000. An additional income of at least £10,000 a year, said Lord Derby, was needed if the University was to be kept up to ate. As compared with the last pre-war year, the number f students had nearly doubled and the cost per student ad risen by 50 per cent. At the close of the proceedings he Lord Mayor gave £1000 to the University funds.

LONDON HOSPITAL DINNER.—More than 200 old tudents, including Sir Neville Howse, V.C., Minister of Health for the Commonwealth of Australia, attended the nnual dinner held at the Trocadero Restaurant on Oct. 21st. There was no musical entertainment—except a little accidental nging from the residents' table—and there were only two peeches; these, however, were so good as to please both erious and light-minded elements in the audience. Recent vents at the hospital were dealt with by the chairman, Mr. Russell Andrews, who referred to the death of Queen lexandra—succeeded as President of the hospital by Queen Mary—and spoke of changes in the medical and nursing staff. Mr. Sherren, he said, had found that he must go down to the ast again, though this time in a steamship, and the hospital ad also lost the valued services of two anæsthetists, Dr. robyn Williams and Dr. Clapham. The retirement of ster Victor, recently Sister Marie Celeste, was a further isfortune that would be felt by generations of housemen and urses whom she had taught, and by the countless patients ho thought so much of her. Amongst new appointments ere those of Mr. Victor Lack and Mr. Alan Perry, and ıe hospital was fortunate in having their services. After eading a long list of present students whose fathers and ncles had been there before them, Dr. Andrews turned from ıe present to the past and produced, as from the widow's ruse, a fresh set of stories—mostly told against himself ıd as amusing as they were characteristic. On one occasion e said, the progress of a long hysterectomy had been atched most earnestly by a certain clerk. Towards the ıd of it Dr. Andrews noticed that the bladder was beginning fill up, and, being pleased to see by this that the patient as bearing the shock of operation well, he turned to this erk and said: "Well, Mr. So-and-so, I think (don't you) ıat the bladder is increasing in size? Are you *pleased* to e that happening?" "Oh, yes, Sir, I am very pleased." Why are you so pleased, Mr. So-and-so?" "Well, Sir, shows, at any rate, that you haven't tied both ureters." his and other stories recalled the local colour, so to speak, Dr. Andrews' celebrated matinées, and everyone was ad to have a further series of reminiscences from Dr. ıul Saint, who proposed the chairman's health in an nusing and sincere speech. Whilst greatly regretting his cent retirement, Dr. Saint hoped that Dr. Andrews would ng keep up his connexion with the hospital. He was a ıssical example of a man who got on with the job, and s old students would always have the happiest memories his classes and his help. The toast was then received with thusiasm and drunk with musical honours. After Dr. ndrews had briefly replied, he proposed the health of e dinner secretaries, Mr. E. C. Lindsay and Mr. G. E. eligan, which was dealt with in the same way. The party en gradually broke up in good order.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

EMERGENCY REGULATIONS.

PARLIAMENT reassembled on Monday, Oct. 25th, for the purpose of renewing the regulations under the Emergency Powers Act in connexion with the stoppage in the mining industry.

HOUSE OF COMMONS.

MONDAY, OCT. 25TH.

A Question of Privilege: Dr. Salter's Charge against Members.

Sir A. HOLBROOK called attention to a statement made by the hon. Member for West Bermondsey (Dr. Salter) at a meeting of the Good Templars on Oct. 12th. The hon. Member then stated "I have seen many Members drunk in the House of Commons and I am sorry to say no party is exempt." When interviewed later he had said the allegation which he had made was quite true and that it was considerably on the Conservative side because there were more of them." He (Sir A. Holbrook) considered this a most outrageous attack on the dignity of the House. It was quite unjustified, and he considered that it brought the hon. Member who made it within the rules of the House as regarded a breach of privilege. Surely a statement of this character was calculated to do irreparable damage to that honourable House, and those who were there to maintain the dignity of their position. He knew that some Members on the opposite benches who came from the north of the Tweed had made it their boast that they intended to destroy the character of the House of Commons.

The Speaker said that if the hon. member intended to raise a question of privilege he must not introduce extraneous matters.

Mr. CLYNES asked whether it was permissible for an hon. Member to proceed with a statement of this kind in the absence of the hon. Member affected, and whether notice of the matter had been given.

Sir A. HOLBROOK said he sent a telegram to the hon. Member telling him he was bringing up the matter that day. Continuing, he said that Dr. Salter, when asked whether he meant the allegation, said "Bless my soul, of course I did. Obviously I am not going to name colleagues of mine but if I am challenged in the House I will tell them to their faces." He (Sir A. Holbrook) thought that was a great reflection upon the character of the Members of the House. Three or four years ago when Mr. John made a similar statement he withdrew it and made an ample apology to the House. Dr. Salter had declined to withdraw his statement, and, moreover, had repeated it on more than one occasion. That constituted a breach of privilege and he therefore moved "that the speech of the hon. Member for West Bermondsey (Dr. Salter) reported in the *Daily Express* of Oct. 13th is a gross libel upon the Members of the House and a gross breach of its privileges."

The SPEAKER, after putting the question, asked if Dr. Salter was present.

There were cries from the Labour benches of "He has not received any notice."

Mr. CLYNES said he did not associate himself with the observations made outside the House by Dr. Salter. He trusted, however, that this motion would be resisted because of the offensive terms in which the subject had been discussed and because of the unnecessary and unfair counter-charges which had been made.

An hon. Member: By a brewer's advocate.

Sir A. HOLBROOK rose to a point of order. He said that he had been charged with being a brewer's advocate.

Mr. BECKETT: Everyone knows it.

Viscountess ASTOR: Hear, hear.

The SPEAKER said that hon. Members must not make interruptions of that kind.

Mr. CLYNES, continuing, said that a speech like that of Sir A. Holbrook ought not to be made except in the presence of the Member concerned, and the House was entitled to know when the telegram was sent to the hon. Member, who was absent.

Mr. CHURCHILL (Chancellor of the Exchequer) said that the speech to which Sir A. Holbrook had drawn attention was unquestionably a very serious matter and a reflection upon the character and dignity of the House, and one which, if it were allowed to persist without being repudiated by the House, might gravely injure in the country the reputation of a democratic institution. It was always contrary to the general sense of the House to proceed to judge any matter in the absence of a fellow Member until they were assured that

the absence was due to some cause that the hon. Member had under his control. He would, therefore, ask the Speaker whether, if the House did not proceed any further with this matter that day, it could be raised again on the following day when Dr. Salter was in his place. If that were so, so far as the Government were concerned they would be prepared to move the adjournment of the motion till to-morrow.

The SPEAKER said that it was quite within the right of the right hon. gentleman to move that the debate be adjourned.

Mr. CHURCHILL accordingly moved the adjournment of the debate.

Mr. LLOYD GEORGE supported the motion of the Chancellor of the Exchequer. He said that he thought the Government had taken a very wise course. It was obviously very desirable that the hon. Member concerned should be present. There seemed to be some doubt whether Dr. Salter had received notice in time. It was undoubtedly a very serious charge to make against an assembly upon which so much depended. The repute of Parliament was not the inheritance of any particular party; it was important to the whole nation. Those who had any experience of these questions of privilege knew that on the whole it was very difficult procedure and the House did not always come out very well. He could not help thinking that Dr. Salter when he came face to face with the sentiment of the House—because it was a sentiment which was by no means confined to those who supported the Government, but was common to all parties in the House—he thought that the hon. Member would feel that not so much in his own interests as in the interests of the nation as a whole and the repute of such an important part of a constitution as the British Parliament it was desirable to withdraw the charge which might be only too readily taken up by those who did not know about Parliament. It was not true, and he was speaking as an old Member. Therefore, he sincerely hoped that opportunity would be taken to-morrow to clear up the situation and that it would not be necessary to proceed with Sir A. Holbrook's motion.

The debate was adjourned.

Outbreak of Infantile Paralysis.

Mr. AMMON asked the Minister of Health whether he would make a statement to the House as to the reported outbreak of infantile paralysis at Broadstairs and Leicester.

Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied: An outbreak of infantile paralysis occurred in Broadstairs this month. Fifty-three cases have been notified and there have been two deaths. The outbreak has been mainly restricted to private boarding schools and day-schools in Broadstairs; three cases have occurred in convalescent homes. A medical officer of the Ministry visited Broadstairs immediately and has conferred with the medical officer of health and the local medical practitioners as to the administrative arrangements for dealing with the outbreak. He has also been available for consultation in regard to individual cases. All necessary precautions have been taken to control the epidemic, leaflets of advice have been issued, and facilities for hospital isolation and disinfection provided. The outbreak in Leicester began at the end of July and reached its maximum in the week ending Sept. 18th. The last case was notified on Oct. 14th. There were altogether 73 cases, six of which were fatal. They occurred sporadically, all over the town. In no instance did more than one case occur in a household and no one school was specially affected. Each case was personally investigated by the medical officer of health who arranged for the necessary isolation and for treatment, either at the isolation hospital or the Royal Infirmary.

Mr. AMMON asked whether instructions were issued from the Ministry of Health, so far as Broadstairs was concerned, that all reports were to be suppressed and no information allowed to leak out.

Sir KINGSLEY WOOD said that the Ministry were satisfied that there was no question of sleepy sickness involved. In regard to publication, all notifications had been published in the official returns week by week and he thought it was last week that the Council at Broadstairs—the proper body to make a statement—issued an official statement to the public generally.

TUESDAY, OCT. 26TH.

Dr. Salter's Charge against Members.

On the adjourned debate on Sir A. Holbrook's motion with reference to a speech delivered on Oct. 13th by Dr. Salter,

Dr. SALTER explained his absence on the previous day. He said that he was an official medical referee of one of the largest trade-unions in the country and he was engaged on *subpœna* in the courts giving medical evidence in workmen's compensation cases. His first knowledge that the matter was to be dealt with in the House was at 4.15 P.M., when a telegram signed "Holbrook" was handed to him as he stepped from the witness-box. The telegram had been sent to his house and his people had had some difficulty in finding him. On receiving the telegram he proceeded as fast as possible to the House and interviewed the Speake immediately on his arrival to explain the reason for hi absence. The speech to which exception has been take was delivered and reported over a fortnight ago, bu although the hon. Member who had raised this matter i the House found time to indicate his intentions to a news paper, he had not the courtesy or decency to inform hir till it was too late. With regard to the main speech and th indictment against him, he (Dr. Salter) had to say, speakin with a full sense of responsibility and regardless of any conse quences to himself, that he was not prepared to withdraw modify, or apologise for anything he had said on this matte He proposed to repeat the words which he had used an about which complaint had been made. At the same tim the House should certainly know the setting of the remark and the framework of the speech and not merely judge b two or three isolated sentences taken for sensational pres purposes from the context and published in that form The occasion on which the speech was delivered was tha of a small local temperance meeting of a body which wa celebrating its jubilee. He took occasion to make a historical review of the whole drink problem in this countr during the last 100 years, and he pointed out that th problem was a totally different one to-day from that whic confronted the founders of that Society. At that time gros and bestial drunkenness was common and even respectable and the phrase, "as drunk as a lord," indicated that th practice was conventional even among the upper circles o society. He pointed out that to-day they had got ri almost entirely of that bestial drunkenness which disfigure our social life in earlier days and that that change ha affected all ranks of society. Drunkenness to-day wa considered disreputable and something entirely improper i any person who held responsible public office. He the went on to point out that although that was the case i still remained the unfortunate fact that a certain pro portion of all classes in society—a small section, bu none the less sufficient to figure in statistics in the courts— could not drink a little without drinking too much and tha applied not merely to the poorer people, but even Member of that House were not exempt from that condemnation He went on to say—and he repeated it that day—that h had seen Members of all parties in the House—his own part he regretted to say included—drunk in the House, not o one occasion but on many occasions. (Cries of "Name." He was coming to the question of names.

The SPEAKER: I do hope the House will hear this matte quietly.

Dr. SALTER, continuing, said that when he said that h had seen such things he was making a statement which wa within the common knowledge of practically every Membe of the House, and it was a piece of affectation and hypocris for Members of the House to deny it. Since the matte was raised on the previous day from 50 to 60 Members a the very least had told him that they approved of wha he had said. They might not have agreed altogether wit the wisdom or propriety of making the utterance, or wit the particular way in which it was made, but they did nc contest the truth or accuracy of what he had said. H said further, that he had assisted other Members of th House to remove a hopelessly intoxicated Member from it precincts. That was known to Members on all side (Cries of "No.") It was common knowledge, and wa a smoking-room jest. He repeated, as he stated in the pres when he was tackled immediately after the speech, that h would do, the statement in the House in the presence c the persons who themselves were guilty. They mus have a proper sense of proportion in this matter. The could not take 600 men and women drawn from all socia grades, thrown together promiscuously, without finding certain number amongst them who unfortunately, if the took any drink at all, invariably were unable to save then selves from the disaster of taking too much. It was a mo unfortunate fact—a physiological fact—that the first effe of alcohol on some people at any rate was to remove a their powers of inhibition—all their powers of saying n That was the reason why he and a number of his colleagu in the House were personal abstainers for the sake of th weaker brethren in the House as well as outside. T number of such persons in the whole community w relatively small, and the number in the House was relative small; but no one could deny that they existed. He w in the 1922–23 Parliament and he saw more drunkenne then than he had seen in this Parliament. If it was a brea of privilege to criticise the action of certain Members wh he considered disgraced the House, degraded the Hous and lowered its tradition and its prestige by their action if that was a breach of privilege, let it be so. He had co mitted a breach of privilege and he could make no apolo therefor, whatever the consequence to himself might b He desired as earnestly and sincerely as anyone in t House to maintain the high prestige of the House and i authority in the country. He believed that the Parli mentary tradition alone would save the nation from ultima

disaster—industrial and economic. He desired to see the authority of Parliament increased rather than diminished, but he ventured to say with all respect that that end would be attained far more if certain Members of the House reformed their ways, and if they were given no support, such as would be given by voting for a resolution of this sort, and by attempting to intimidate and browbeat a few people who had taken on them the thankless and unpopular task of pointing these matters out. If the House desired to pursue the matter further and to appoint a Select Committee, or refer the matter to the Committee of Privileges, he would be prepared to go to that Committee and, painful ordeal though it would be, he would mention the individuals in each party whom he knew to be guilty in this regard, and he would take with him to that Committee a large galaxy of colleagues in the House who would be prepared to support his statement. He was entirely unrepentant with regard to what he had said.

The SPEAKER: The hon. Member must withdraw while the House proceeds with the debate.

Dr. SALTER thereupon withdrew from the Chamber.

Mr. BALDWIN, Prime Minister, said that he knew from his own experience that in all classes a steady and rapid growth of temperance, by which he meant the temperate use of alcohol, had taken place throughout the country. In an assembly like the House of Commons with 600 Members there must be some cases where Members forgot themselves temporarily. They all knew it, but they never spoke about it. What had hurt the feelings of the House was that one of their number who worked with them and shared their social life had thought it his duty to speak about these things outside and not to express regret to the House for having done so. He had no doubt that it was a libel upon the Members of the House and a breach of privilege. He would vote for the motion.

Mr. CLYNES suggested that it would be best to regard Dr. Salter's speech at best or worst as a well-intentioned vigorous effort at temperance propaganda and withdraw the motion.

Sir A. HOLBROOK said that he regretted that he could not see his way to withdraw the motion.

Mr. LEES-SMITH moved as an amendment that the matter be referred to a Committee of Privileges.

On a division the amendment was defeated by 247 votes to 95—majority against, 152.

The motion was then carried without a division.

CHELSEA CLINICAL SOCIETY.—The annual dinner of the society was held at the Café Royal, London, on Tuesday last, Dr. Ernest Young, the President, being in the chair. Well-selected speakers made the dinner an interesting as well as amusing occasion. Sir John Rose Bradford, proposing prosperity to the society and saying that its hospitable instincts were derived from the great Harvey's own precepts, pointed out that the connexion between Chelsea and clinical medicine was made particularly close by the association of Chelsea with Sir Hans Sloane, lord of the manor, physician, botanist, and archæologist. Dr. Young, in reply, said that in the case of the Chelsea Clinical Society, founded 30 years ago, its comparative youth accorded with its vigour, for they had this year to announce increased membership of the society, record attendances at the meetings, and success at the dinner gatherings. The health of the visitors was proposed by Mr. Ivor Back, who described Lord Carson as the terror of the inexpert expert witness; begged the Dean of St. Paul's to explain whether his name rhymed with "a jolly good binge" or with "let us dance and sing"; while to the third responder to the toast, Sir Arthur Conan Doyle, he addressed a moving reproach, in that the latest Sherlock Holmes adventure contained no mention of that sympathetic medical character, Dr. Watson. Lord Carson replied directly to Mr. Back's challenge, and, after testifying to his personal debt to medicine and his admiration of the medical profession, confessed that he liked that profession least of all in the witness-box, for, speaking as an advocate, he found the medical witness adamantine. Dean Inge told some humorous stories, and Sir Arthur Conan Doyle was thoroughly interesting in his reminiscences of the life of the unqualified assistant, which years ago he had led in the course of a strenuous apprenticeship to and career in the profession—a course which included volunteer military service, medical officership to a whaler, and the lease of consulting-rooms near Cavendish-square, where, he said, "I had a consulting-room and a waiting-room, but gave up the tenancy when both became waiting-rooms." The toast of the Allied Medical Societies, proposed by Dr. Seymour Price, was replied to by Sir James Berry, and Mr. Mortimer Woolf invited the company to drink to the health of their President with musical honours. During the evening Mr. Sterndale Bennett entertained the company with original songs, and especially with a reproduction of a Primrose League orator, asking a league meeting to withstand the attacks of Socialism, and trying to explain to them the annual balance-sheet.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY, Nov. 2nd.—5.30 P.M., ORTHOPÆDICS. (Cases at 5 P.M.) Mr. A. H. Todd: Ununited Fracture of Neck of Femur. Case for Diagnosis: Congenital Malformation of Right Upper Limb and of Left Eyelid. 8.30 P.M., PATHOLOGY.

WEDNESDAY.—5.30 P.M., TROPICAL DISEASES AND PARASITOLOGY. Communications: Dr. Aldo Castellani: Some Observations on Certain Cases of Chronic Colitis. Dr. T. W. M. Cameron: Some Biological Conceptions of Hydatid. Dr. R. J. Ortlepp: The Species of Nematode Genus Physaloptera in Man. Mr. S. Annecke: The Relative Numbers of Male and Female Gametocytes in Human Malaria (*P. falciparum*, *P. vivax*, *P. malariæ*), and Hæmoproteus in Birds. Dr. J. B. Christopherson: Further Observations on a Case of Actinomycosis. 8.30 P.M., SURGERY. Discussion: The Treatment of Œsophageal Carcinoma, to be opened by Mr. F. J. Steward, who will be followed by Mr. H. S. Souttar. Members of the Section of Laryngology are cordially invited to take part.

FRIDAY.—5 P.M., LARYNGOLOGY. Cases at 4 P.M. will be shown by Mr. Bell Tawse, Dr. Dan McKenzie, Mr. T. B. Layton, Mr. Norman Patterson, and others. Presidential Address: Dr. Andrew Wylie: References in Literature and Folk-lore to Rhinology and Laryngology. Communication (with cinematograph demonstration). Sir Charles Ballance and Mr. Lionel Colledge: Effects of Nerve Anastomosis on the Movements of the Vocal Cords and Diaphragm. OTOLOGY: Annual dinner, Langham Hotel, 7.45 P.M. Mr. G. J. Jenkins in the chair. 8.30 P.M., ANÆSTHETICS.

SATURDAY.—10.30 A.M. (Cases at 9.45 A.M.). OTOLOGY. Papers on Diseases of the Outer Ear will be read as follows: Introductory Remarks, by the President (Dr. Dan McKenzie). Common Affections of the Skin of the Outer Ear, by Dr. A. M. H. Gray. Intractable Dermatitis of the Pinna and External Auditory Meatus Secondary to Chronic Suppuration of the Middle Ear, by Mr. F. C. Ormerod. Paper: Mr. F. J. Cleminson: Deafness Associated with Fragilitas Ossium. Cases and specimens will be shown by Mr. Ormerod, Mr. Cleminson, Dr. Dan McKenzie, and Mr. Franklin. Epidiascopic Demonstration: Dr. J. S. Fraser: A Case of Congenital Deafness with Malformation of the Bony and Membranous Labyrinth on Both Sides.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn-fields, W.C.

MONDAY, Nov. 1st.—5 P.M., Mr. C. E. Shattock: Scrotal Tumours.

THURSDAY.—5 P.M., Prof. Elliot Smith: The Significance of Anatomy. (Thomas Vicary Lecture.)

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.

THURSDAY, Nov. 4tth—5 P.M., Dr. F. G. Crookshank: The Theory of Diagnosis. (Bradshaw Lecture.)

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, Nov. 1st, to SATURDAY, Nov. 6th.—FELLOWSHIP OF MEDICINE. Special lecture at the Medical Society of London, 11, Chandos-street, W. Thursday, Nov. 4th, at 5 P.M., Mr. C. Max Page on Observations on the Treatment of Fractures. Free to all members of the medical profession.—ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, W. Special afternoon demonstration in Clinical Surgery at 3 P.M. (Nov. 1st) by Mr. E. Laming Evans. Free to all members of the medical profession.—ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C. Special demonstration in Clinical Ophthalmology at 1 P.M. (Nov. 4th) by Mr. M. L. Hepburn. Free to all members of the medical profession.—HAMPSTEAD GENERAL HOSPITAL, Haverstock Hill, N.W. Practitioners' course in General Medicine and Surgery, 4.30 P.M. to 6 P.M. daily. Clinical demonstration followed by a lecture.—LONDON LOCK HOSPITAL, 91, Dean-street, W. Clinical work at the hospital each day from 1 P.M. onwards. Special lectures most afternoons. Further information from the Secretary of the Fellowship of Medicine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY, Nov. 1st.—2 P.M., Medical Cases in the Wards. 2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.

TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.

WEDNESDAY.—2.30 P.M. to 5 P.M., Medical Skin and Eye Clinics. Operations.

THURSDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose, and Throat Clinics. Operations.

FRIDAY.—2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.

On Tuesday, Nov. 2nd, and Thursday, Nov. 4th, at 2.30 P.M., there will be special demonstrations of ear, nose, and throat cases and medical cases by Mr. W. Ibbotson and Dr. A. J. Whiting respectively.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, Nov. 1st.—10 A.M., Dr. Dowling: Skin Dept. 12 noon, Mr. Simmonds: Demonstration in Fractures and Applied Anatomy. 2 P.M., Mr. Addison: Surgical Wards.
TUESDAY.—10 A.M., Medical Registrar: Clinical Methods. 12 noon, Dr. Burrell: Chest Cases. 2 P.M., Mr. Sinclair: Surgical Out-patients.
WEDNESDAY.—12.15 P.M., Dr. Burnford: Medical Pathology. 2 P.M., Mr. Tyrrell Gray: Operations. 2 P.M., Dr. Owen: Medical Out-patients.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Dept. 2 P.M., Mr. Bishop Harman: Eye Dept. 2 P.M., Mr. MacDonald: Genito-Urinary Dept.
FRIDAY.—10 A.M., Sir Henry Simson: Gynæcological Operations. 2 P.M., Dr. Burrell: Medical Out-patients. 2 P.M., Mr. Vlasto: Throat, Nose, and Ear Dept.
SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy. 10 A.M., Dr. Saunders: Medical Diseases of Children. Operations, Medical and Surgical Out-patients, special Departments, daily 10 A.M. to 5 P.M., Saturdays 10 A.M. to 1 P.M.

POST-GRADUATE HOSTEL, Imperial Hotel, Russell-square, W.C.
MONDAY, Nov. 1st.—9 P.M., Sir James Dundas-Grant: Some Clinical Experiences.
FRIDAY.—9 P.M., Dr. E. I. Spriggs: Diverticulosis. Dinner 8 P.M. 5s.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street.
THURSDAY, Nov. 4th.—4 P.M., Dr. G. F. Still: The Urine in Childhood.

NATIONAL HOSPITAL, Queen-square, Bloomsbury, W.C.
MONDAY, Nov. 1st.—2 P.M., Dr. Hinds Howell: Out-patient Clinic. 3.30 P.M., Dr. Risien Russell: Vertigo.
TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Hinds Howell: Muscular Atrophy.
THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Mr. Just: Intracranial Infection after Otitis Media.
FRIDAY.—2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Dr. Bailey: The Electrical Reactions of Muscles.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Nov. 2nd.—5 P.M., Dr. Knowsley Sibley: Principles of Treatment. Local.
THURSDAY.—5 P.M., Dr. A. M. H. Gray: Eruptions Due to External Irritants.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C.
WEDNESDAY, Nov. 3rd.—4 P.M., Dr. H. M. Vernon: Ventilation in Relation to Health.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.
FRIDAY, Nov. 5th.—3.30 P.M., at the Royal Infirmary: Dr. Hallam: Demonstration of Some Common Skin Diseases.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSES.
TUESDAY, Nov. 2nd.—4.15 P.M., Dr. W. Dyson: Eczema in Relation to Sensitisation of the Skin.
FRIDAY.—4.15 P.M., Prof. R. B. Wild: Cancer of the Skin.

ANCOATS HOSPITAL POST-GRADUATE COURSE.
THURSDAY, Nov. 4th.—4.15 P.M., Mr. Harry Platt: Treatment of Common Injuries.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.
TUESDAY, Nov. 2nd.—4 P.M., Dr. R. Barclay Ness: Difficulties in the Clinical Diagnosis and Prognosis in the Various Forms of Chronic Bright's Disease. Discussion to be opened by Dr. C. E. Douglas.

Appointments.

BURNHAM, CECIL, M.B., Ch.B., F.R.C.S. Edin., has been appointed Surgeon to the Out-patients of the French Hospital.
COMPTON, A., M.D., D.Sc., Director of the Municipal Bacteriological and Chemical Laboratories, Alexandria.
Paddington Green Children's Hospital: YOUNG, J. M., M.B., B.Ch. New Zealand, House Physician; EVANS, J. P., M.R.C.S., L.R.C.P. Lond., House Surgeon.
Royal Halifax Infirmary: POLLARD, P.L., M.B., Ch.B. Manch., and HENRY, MC.W., F.R.C.S. Edin., Senior Honorary Surgeons; CLARK, T. L., M.D. Edin., and BOLTON, S., M.D. Edin., Assistant Honorary Surgeons.

Vacancies.

For further information refer to the advertisement columns.

Bethlem Royal Hospital, Lambeth-road, S.E.—Jun. Asst. P. £350.
Bradford Royal Infirmary.—H.S. £150.
Central London Ophthalmic Hospital, Judd-street, W.C.—Asst. Surg.
Central London Throat, Nose, and Ear Hospital. Gray's Inn-road, W.C.—Hon. Asst. Anæsth.
Coventry and Warwickshire Hospital, Coventry.—Res. H.S. £125.
Darlington County Borough.—Deputy M.O.H. £750.
Epsom Union.—M.O. and Public Vaccinator. £93 6*s.* 8*d.*
Essex, Administrative County of.—Asst. County M.O.H. £600.
Federated Malay States Medical Dept.—Radiologist. £700.
Freemason's Hospital and Nursing Home, 237, Fulham-road, Chelsea, S.W.—Res. M.O. At rate of £250.
Herefordshire General Hospital.—Hon. S.
Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—Pathologist and Supt. £750. Also Asst. P.
Hospital for Epilepsy and Paralysis, Maida Vale, W.—Med. Reg. £100.
Hospital for Sick Children, Great Ormond-street, W.C.—Bio-Chemist. £600.
Hull Royal Infirmary.—Hon. Phys.
London, Female Lock Hospital, 283, Harrow-road, W.—Hon Obstet. S.
London, Homœopathic Hospital, Great Ormond-street, W.C.—Asst. P. for Dis. of Women.
London, Royal Free Hospital, School of Medicine for Women, Obstet. and Gyn. Unit.—Sen. Asst., £350. Also Third Asst. £270.
London, Temperance Hospital, Hampstead-road, N.W.—Hon. P. Also Clin. Asst. in Cas. Dept.
Manchester, Ancoats Hospital.—Anæsthetist. 10*s.* 6*d.* per attendance. Also Pathological Reg. £100.
Manchester Corporation, Public Health Dept.—Asst. M.O.H. (Maternity and Child Welfare). £850. Also Asst. M.O.H. £750.
Manor House Hospital, Golders Green, N.W.—Asst. S. £750.
Middleton-in-Wharfedale Sanatorium.—Sen. Asst. M.O. £600.
Miller General Hospital for South-East London, Greenwich-road, S.E.—Asst. P. and two Asst. S.'s.
Newark Hospital and Dispensary.—Res. H.S. At rate of £200.
Northampton General Hospital.—Hon. S.
Northumberland, Wooley Sanatorium, near Hexham.—Med. Supt. £850.
Norwich, Norfolk and Norwich Hospital.—H.S. for Ear, Nose and Throat and Ophth. Dept. £120.
Royal Northern Hospital, Holloway, N.—M.O. to Out-patients. At rate of £125. Also H.S. At rate of £70.
St. George's Hospital, S.W.—Temp. Obstet. Reg. £40.
St. Mary's Hospital, W.—Phys. for Mental Diseases.
St. Mary's Hospital for Women and Children, Plaistow, E.—Res. M.O. and Asst. Res. M.O. At rate of £175 and £130 respectively.
St. Stephen's Hospital, 369, Fulham-road, S.W.—Third Asst. M.O. £300.
Sheffield Royal Hospital.—Ophth. H.S. £80.
Sheffield, Winter-street Hospital.—Jun. Asst. Tub. O. £359.
Throat Hospital, Golden-square, W.—H.S. At rate of £100.
West London Hospital, Hammersmith, W.—Phys.

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Mere (Wiltshire), Newmilns (Ayrshire), and at Tilbury (Essex).

Births, Marriages, and Deaths.

BIRTHS.

EDWARDS.—On Oct. 18th, at Warwick House, Hemel Hempstead, the wife of Frank H. Edwards, F.R.C.S.E., of a son.
GRIFFITHS.—On Oct. 19th, at Farfield House, Kidderminster, the wife of P. Digby Griffiths, M.B. Camb., of a daughter.
SALISBURY.—On Oct. 21st, at 19, The Drive, Northampton, the wife of Walter Salisbury, M.S., M.D., F.R.C.S., of a daughter.

MARRIAGES.

O'SHAUGHNESSY—HUNTON.—On Oct. 3rd, at the Cathedral, Khartoum, Sudan, Laurence Frederick O'Shaughnessy, F.R.C.S. Eng., Sudan Medical Service, to Gwendolen Mary Hunton, M.B., B.S., C.M.S. Hospital, Omdurman, daughter of the late Frederick Hunton, M.D., of Sedgefield, County Durham.
PHILLIPS—NAISH.—On Oct. 23rd, at St. James's, Paddington, Sir John Phillips, M.D., J.P., to Beatrix Margaret, eldest daughter of the Rev. Francis Clement Naish, vicar of Upnor, Kent, and formerly vicar of Holy Trinity, Milton next-Gravesend.

DEATHS.

BOWES.—On Oct. 21st, at Greeba, Oxenden-square, Herne Bay, after a very short illness, Charles Kessick Bowes, M.A., M.D.
GRUGGEN.—On Oct. 19th, after a short illness, Dr. William Gruggen, M.O.H., of Durban-road, Watford.
HOLMES.—On Oct. 21st, at his residence, Wilbury-road, Hove, Colonel Thomas James Paul Holmes, M.B., L.R.C.S.I., R.A.M.C. (retd.), aged 81.
LLOYD.—On Oct. 23rd, at Tawelfan, Vale-street, Denbigh, N. Wales, David Lloyd, M.B., C.M. Glasg., J.P.
ROBINSON.—On Oct. 18th, at a nursing home, result of service, Captain George Cuthbert Robinson, M.R.C.S., L.R.C.P. Lond., R.A.M.C.
SCOTT.—On Oct. 24th, at his residence, Amherst-road, Ealing, Colonel Bertal Hopton Scott, C.M.G., M.B., B.Ch., A.M. (retd.).
SWANN.—On Oct. 25th, at a London nursing home, Mary Aelfreda St. Clair Swann, M.B., aged 27.
WILSON.—On Oct. 25th, at Bushey, Herts, Daniel Wilson, M.D.

*N.B.—A fee of 7*s.* 6*d.* is charged for the insertion of Notices of Births, Marriages, and Deaths.*

Notes, Comments, and Abstracts.

RHEUMATIC DISEASE IN INDUSTRY.*

BY MATTHEW BURROW RAY, D.S.O., M.D. EDIN.,
HON. SEC., BRITISH COMMITTEE ON RHEUMATISM, INTERNATIONAL SOCIETY OF MEDICAL HYDROLOGY.

THE prevalence of rheumatic disease, both in this country and over Northern Europe generally, is a serious drain on the industrial resources of the countries concerned. The increased interest that is being taken in the problem of its prevention and arrest is largely due to the issue two years ago of the report on the Incidence of Rheumatic Diseases by the Ministry of Health, based on an inquiry made by 49 practitioners. Some striking figures in this report may be recalled. Each year some 370,000 insured persons seek advice for one or other form of rheumatic disease. In males these conditions are responsible for exactly one-sixth of the total sick absence from all causes. Nearly one-third of the male sick absence is due to non-articular rheumatism. Acute and subacute rheumatism only account for one-seventh. The sick absence in females amounts to one-seventh of the total from all causes. One-half of this is due to chronic joint disease, principally rheumatoid arthritis, which accounts for 30 per cent. One-seventh of the total sick benefit or nearly £2,000,000 is paid away annually to the insured population in respect of invalidity from these diseases and over 3,000,000 weeks of work are lost in consequence. This huge sum of money is not being spent in the provision of any treatment whatsoever; the allowance is for subsistence only.

What are the facilities at present available in this country for the treatment of this rheumatic population? The vast majority have to rely on what their ordinary medical attendant is able to give them. In the comparatively trivial cases it is no doubt enough, but there must remain a very large number who are not being adequately looked after. When we consider that the total number of beds available at the spa hospitals amounts to 681 and the annual number of patients treated for all diseases is 8606, of which 93 per cent. belong to the rheumatic group, we at once see that the supply does not come anywhere near the demand. Apart from the great spa hospitals there are no institutions where the insured rheumatic patient can obtain treatment of the kind likely to prove most beneficial. The physical treatment available at the out-patient departments of some of the larger hospitals hardly comes under this category.

Situation in Other European Countries.

Before considering how these defects can be remedied and what further facilities should be supplied, I will briefly summarise the situation as it exists in other European countries, based on reports presented to the conference on industrial rheumatism held last November.[1]

Holland.—There are no statistical official data to go on, but the number of rheumatic patients is very great. There are no spas and physical treatment is concentrated at the Central Institute for Physical Therapy in Amsterdam, of which Dr. J. van Breemen is director. Private patients who attend this Institute are mostly at a late stage of the disease and do not always finish their cure. Ten years ago panel patients were few in number, but now, under an agreement by which the sick funds guarantee rheumatic sufferers free treatment, nearly every panel patient who develops rheumatism comes to Dr. van Breemen in course of time. Every year he sees from 900–1000 patients with chronic rheumatic disease and another 1000 cases are sent to spas in other countries or treated at home. At the Institute general treatment with steam hot-air or electric light baths, douche massage, and mercury-vapour lamp is given for the improvement of the circulation, metabolism, and nervous system. These are found to have a favourable influence on local processes even without local treatment. To improve the functions of the joints fango, diathermy, local hot air and light baths, massage and exercises are employed. Dr. van Breemen pays a tribute to the extreme value of the Scottish douche in the treatment of what he describes as neuralgias of rheumatic origin. His general conclusions are as follows:—

1. For the better prevention of invalidity from rheumatic disease the wide application of physical treatment and baths is very necessary.
2. The study of the skin as an organ is a preliminary to the efficacious battle against rheumatism.
3. Spas should take measures to ensure the efficient treatment of panel patients.
4. In rheumatism the margin of safety in regard to rest and exercise is more limited than in the healthy subject.
5. Between the function of a joint and its pathological-anatomical condition there is often a great incongruity.
6. The establishment of clinics and laboratories for methodical research in rheumatism is greatly to be desired.
7. Every occupation has its own distinctive rheumatism.
8. The foundation of an international committee to bring more scientific and practical unity into the study and combating of rheumatic disease is essential.

Sweden.—There are no exact statistics of the incidence of rheumatic disease, but the available figures show that articular rheumatism ranks next to the infirmities of old age and above pulmonary tuberculosis in causing invalidity. Every year out of a population of 6,000,000 about 1500 persons are pensioned for articular rheumatism. As the disease is of long duration this entails great expense to the community.

Dr. G. Kahlmeter (Stockholm), consultant to the Direction des Pensions de Retraite, reports facilities for treatment as follows:—

The Spas.—Of these there are about 50 under private management, some of them centuries old, open only for about two and a half months in the year, and many of them not equipped to treat the different forms of disease. Prices vary, the cheapest rate being the equivalent of £10 for five weeks' treatment. The total number under treatment for all diseases is round about 30,000 each year, probably about 5000 being rheumatic cases.

Board of Pensions Institutions.—These are intended to prevent disabling—i.e., permanent pensioning. There are four in different parts of the country with 350 beds in all, compared with 681 beds available at the spa hospitals of Great Britain. They are directed by physicians, are open all the year, possess all the modern appliances for treatment, and are specially designed for the industrial classes. The course of treatment lasts two to three months; the patients get dental and orthopædic care, and, if necessary, are taught trades more suitable for their health. Two-thirds of the expense is borne by the State, the remaining third is paid by the patient himself or by the community to which he belongs if he is without means.

General Hospital Treatment.—This is practically confined to acute cases, very much as in this country. The Board of Pensions are, however, now building special departments in connexion with three of the largest hospitals for the treatment of arthritis and rheumatism.

Dr. Kahlmeter points out that they are still without what he regards as the most urgent thing—viz., a central arthritis hospital in Stockholm in close connexion with the university clinics. The Swedish committee for the combating of rheumatism is considering the provision of such a hospital.

Denmark.—There is no systematic movement for combating rheumatic affections. Among the 1,400,000 members of the authorised sick benefit club, which practically means the whole working-class of the country, 42,000 cases of rheumatism occur annually. There are no spas where gout and rheumatism can be treated, but six or seven private sanatoria use physical methods. Dr. Hans Jansen (Copenhagen), director of the Department of Physical Treatment, thinks there is a great need of more institutions of this kind and of others specially devoted to the treatment of rheumatic affections. For the total number of cases treated in 1923 was only about 3000: 1850 at the hospitals, 900 at private sanatoria, and 250 at the recently opened People's Sanatorium at Hald.

Switzerland.—There are, according to Dr. Frank Kornmann (Ragaz-Pfäffers), no available returns of cases of rheumatism and no systematic treatment. Insured members or members of sick benefit societies are treated according to opportunity, privately or as in-patients in cantonal hospitals or as out-patients at the chief hospitals or at the spas. At Ragaz all classes are treated and free board and lodging are available for those unable to pay. The treatment for chronic rheumatism includes protein therapy, X rays, movements, and physical treatment, especially by bath cures. When a specific ætiology is discoverable the corresponding specific treatment is added. The results are only partly recorded at out-patient clinics and at the spas. At the Geneva Polyclinic for Physical Treatment cases of chronic articular rheumatism form 30 per cent. of the total. It is worthy of note that 34 per cent. of rheumatic cases come from Geneva itself, 19 per cent. from the coast of the lake, 47 per cent. from the valleys of the Rhone and the Arve. The results of the Polyclinic in rheumatic cases show that slight and early cases are often entirely cured. The more chronic cases frequently show sufficient improvement to enable the patient to lead a normal or quasi-normal life and at any rate to avoid hospitalisation.

Roumania.—There is a general fund for social insurance under the Ministry of Labour. Insured working people who suffer from chronic rheumatism are treated at a marine sanatorium with 300 beds, where medicinal mud baths and other forms of hydrological treatment are available. The very poor people who do not come under the insurance scheme are treated in the Red Cross sanatoria, a certain number being sent to the marine sanatorium mentioned

* Based on a paper read before the Harrogate Medical Society.
[1] THE LANCET, 1925, ii., 1169.

above. Prof. A. Theohary informs us that increasing funds are now being allotted by public bodies in Roumania for the spa treatment of chronic affections among the poorer population.

France.—Sufferers from rheumatic complaints are treated at the thermal hospitals, the ordinary hospitals apparently admitting no rheumatic cases. Chronic cases are hospitalised in the asiles. Dr. Monod (Vichy) tells us that there is no national organisation for the treatment of these conditions and no statistics have been published.

The Need for Research.

Rheumatic disease, as van Breemen truly points out, is a clinical concept, not a disease picture; and, although an attempt to classify diseases of more or less unknown ætiology cannot lead to satisfactory results from the point of view of terminology, orderliness in description demands the adoption of some sort of temporary classification or tabulation. That proposed by the Ministry of Health meets the requirements. With the slow progress of knowledge whenever the ætiology of any member of this ill-defined group is thoroughly worked out, the terms rheumatic and rheumatism are dropped in relation to it. We no longer apply them to the various forms of infective arthritis; we should not speak of gonorrhœal or scarlatinal rheumatism. Chronic rheumatism is disappearing from our medical vocabulary. The difficulties of classification will solve themselves with the increase of knowledge consequent on more extended facilities for research.

No doubt there are great opportunities waiting for further victories in bacteriology and biochemistry; no research work can be considered worthy of the name that does not lay claim to their fullest activities. But there are other directions where research is needed—e.g., the influence of endocrine imbalance and the existence of a definite arthritic diathesis. Llewellyn has drawn attention to the close relationship that exists between certain forms of rheumatic disease and goitre. The association of arthritis with the climacteric is too well known to be dismissed as a coincidence. Climatic influences are still largely unexplained. Beyond the observation that a clay soil is "bad" for rheumatism there is not much on which to found an opinion as to what constitutes a "good" one. Certain dicta about the siting of houses and streets with regard to their elevation, aspect, hours of sunshine, proximity to the sea or to rivers, copied from one text-book to another, do not rest on a scientific foundation. No valid reason has been given in support of the popular idea that marine stations are unsuitable places of residence for rheumatic subjects.

The nebulous state of our ideas on these and many kindred questions is undoubtedly due to the insufficiency of our knowledge of the functions of the skin as a protecting agent and the main channel through which the resistance of the body is maintained. When we consider that one-third of the entire blood-supply of the body is capable of being contained at one time in the cutaneous circulation, the importance of further research into the physiology of this organ is at once evident.

Certain trades are more prone to the incidence of rheumatic disease than others. Trustworthy data on this point can only be obtained from careful investigation of large numbers of workers in the various trades. Not only the workers themselves but the conditions under which they are employed must be carefully gone into. How far van Breemen's saying that every trade has its own particular variety of rheumatic disease is true in this country we do not know, and our ignorance indicates a possible line of fruitful inquiry.

Research on the lines thus briefly indicated has been impracticable for the reason that the material is not readily available. Where are the majority of the cases to be found? The more severe types, chiefly in their early stages, are scattered in twos and threes throughout the general hospitals, where they are in most instances thoroughly investigated from every side—bacteriological, biochemical, radiological, dental, and cardiological. But there is no statistical correlation of such cases and much valuable work is wasted. The more advanced and practically bed-ridden cases are to be found mainly in the Poor-law infirmaries where ample opportunities for the study of end-results are available, but this study is more depressing than valuable, especially if there is nothing else to see. The less serious cases, most of those for which much can be done, are found frequenting the surgeries of insurance practitioners at stated intervals to renew their certificates of disability. No one probably realises more fully than the medical attendant the hopelessness of doing any permanent good to these people without recourse to physical methods of treatment. He is aware of the necessity of highly specialised investigation. But where is he to obtain it? He does the best he can by trying to secure admission for them to one or other of the spa hospitals. Unfortunately, however, the less obvious and permanent the disability, the smaller the chance of securing admission thereto. Apart, therefore, from the Poor-law institutions the only places where cases are collected and available for thorough clinical research are the spa hospitals and here also the end-results are in a depressing proportion.

The remedy for this unsatisfactory state of affairs must afford the maximum amount of service with the minimum amount of expenditure of energy. To begin with, the cases must be collected and then sorted. To commence with, a central clearing house should be provided to which all cases would be recommended by their insurance doctors. Such an institution would form a regular "arthritis unit" with medical director and staff of specialist investigators. Every case sent to the unit would be submitted to investigation, not only bacteriological and biochemical, but on the lines I have briefly sketched out. Careful records would be kept. The unit would decide the future disposal of the case. It might be deemed necessary to keep one case for special observation, another might be instructed to attend at certain times, while a third would possibly be sent to one or other of the spa hospitals.

The first effect of all this would be to prevent the spa hospitals being crowded with unsuitable cases and thus to increase the accommodation for hopeful cases. There would also be a concentration of clinical material out of which a selection of suitable patients for further investigation could easily be made. As such investigations necessarily include inquiries into home and work surroundings, family histories, and the like, the services of non-medical voluntary workers would be enlisted. Research would then proceed on two parallel lines: individual as regards the case immediately under observation, and general as regards the accumulation of data eventually to form the basis for statistical information. As time went on these units or clinics would have to be multiplied and established in all large centres of population. Rheumatic disease is just as prevalent in rural as in urban districts and this difficulty must be faced in any comprehensive scheme by providing lodging accommodation in the neighbourhood of the unit, or by the establishment of hostels, the former being the cheaper to begin with.

Provision of Treatment in Large Towns.

The supply of adequate treatment for the insured rheumatic population is being carefully considered by a committee of the International Society of Medical Hydrology, which has suggested the establishment in all large centres of population of institutions where the services of medical teams will be available. Such a team would consist of a physician (acting as director), a surgeon, a dentist, a radiologist, a throat specialist, a bacteriologist, and a bio-chemist. In-patient treatment would only be required for cases needing special observation and for those who for any reason could not attend as out-patients. Treatment would include vaccine therapy, dental, surgical, and orthopædic treatment as well as measures for the relief of pain, for allaying, for rendering stiff tissues supple, for increasing absorption, and for re-educating muscles. Such measures would comprise saline and aerated baths, whirlpool baths, vapour baths, both local and general, packs of peat, mustard and fango massage, and manipulative douches. The general effect of the various forms of treatment would be the subject of research and careful records and measurements would be made. Inquiry into the comparative value of various kinds of treatment is only possible when large numbers of patients are being dealt with, and the scheme assumes that these units would act as a much-needed stimulus to the serious study and practice of physico-therapy.

Increased Facilities for Treatment at the Spas.

A scheme for dealing with insured rheumatic patients has been formulated by the British Spa Federation, under which treatment is offered either free or at greatly reduced rates. The scheme deals mainly with the class of case which does not require bed treatment or nursing. Accommodation for these cases should be found in hostels established either by the Ministry of Health, the friendly societies, or some local committee; in the initial stage the cheaper and easier course might be taken of providing approved lodgings. For patients requiring bed treatment and nursing, admission to the local mineral water hospital is suggested. In the view of the subcommittee patients should not be certified for spa treatment by their panel doctors, but should pass through one or other of the arthritis units or clinics where their future disposal would be decided after a thorough investigation of their condition. This would ensure the fullest advantage being taken of the available accommodation and unsuitable cases would not find their way to spas to the detriment of others more likely to benefit. The federation estimates that taking the spas as a whole 1500 patients could be under treatment at any one time; this would amount in round figures to close on 20,000 for nine months of the year, allowing a three weeks' stay for each case. Patients should attend at a central place where they would be seen at certain times by those medical men who elect to undertake this work, medical attendance and remuneration being on a sessional basis.

ANOTHER ACTION FOR WRONGFUL CERTIFICATION.

POSTLETHWAITE *v.* PHIPPS AND PRECOX.

UNDER the auspices of the Listerian Society a mock trial was held before the Right Hon. the Lord Chancellor (Lord Cave) and a special jury, of which Lord Hambleden was foreman, at King's College Hospital Medical School, on Wednesday, Oct. 20th. The following members of the society took part: Dr. John Wood (Oswald Postlethwaite), Miss C. Gibson (Lottie Postlethwaite), Dr. R. L. Quilliam (Dr. Sigmund Waterman), Dr. E. B. Strauss (Dr. Dementius Precox), E. N. Butler (Dr. Phipps), and Miss M. McHugh (Flora Macdonald).

Mr. John Forster, of Gray's Inn, represented the plaintiff, Oswald Postlethwaite, a poet, of Gossamer-road, Chelsea. On June 5th, 1926, the cook, Flora Macdonald, had entered the poet's room with his tea, interrupting a moment of inspiration. She had also opened the window, so that his papers were blown about the room. Seizing what he believed to be a ruler, the enraged poet had hurled it at the cook, finding later on that he had really thrown a knife at her. Although he had long been subject to outbursts of fury if interrupted at work, this apparently homicidal attack alarmed his sister, who sent for the local practitioner, Dr. Phipps. The doctor's questions enraged the poet, who became violent. Dr. Dementius Precox, an eminent alienist, was therefore called in, and made another examination, which still further accentuated the anger of the patient, who attacked the specialist. Dr. Phipps and the odd-job man were called to the rescue, and hyoscine was administered. The stuporous poet was then removed, under an Urgency Order, signed by Dr. Precox, to the West Central Asylum. On this Order the doctor had stated, as facts indicating insanity, that the poet believed that there was a conspiracy between the Prime Minister, the Archbishop of Canterbury, and all the Members of Parliament to prevent the publication of his poems, that he stated that no one could understand his poetry, and that he was a reincarnation of the poet Ovid. Mr. Forster submitted that it was for Dr. Precox to prove that the poet was not in fact a reincarnation of the poet Ovid. The qualifications of Dr. Precox were given as M.D. Camb. and F.R.C.P. Lond., and were only peculiar in that he had also an honorary D.Sc. Aberdeen. Another item he had entered on the certificate was that the patient had called Dr. Precox's "aid to monocular vision" the "green eye of the little yellow god," and dealt him a blow on the face which dislodged that apparatus. As soon as the influence of the drug had passed off the poet behaved with such restraint that the superintendent of the asylum, Dr. Sigmund Waterman, discharged him at the end of a week. Mr. Postlethwaite then conceived the idea that Dr. Phipps and his sister were plotting to get him out of the way in order that they might marry, and consulted his friend and pastor, the Rev. Josiah Pentwhistle, a Fire Baptist, who advised him to bring the present action for wrongful detention and defamation of character.

Mr. Forster, having outlined the plaintiff's case as above, then called witnesses.

Evidence for the Plaintiff.

Mr. Oswald Postlethwaite, a lugubrious gentleman in dark glasses, with a lock of damp black hair over his forehead, deposed to the truth of the facts as outlined. He admitted that he was a genius, and only a moderately-tempered genius. The cook had on this occasion caused him to lose a moment of priceless inspiration which might never return. He had published one volume only, and that under the auspices of the Fire Baptists. Other publishers had refused to consider his work. He still believed that there was, in fact, a conspiracy between the Prime Minister, the Archbishop of Canterbury, and all the Members of Parliament to influence publishers against him. The questions of the two doctors had been such as would arouse the suspicions and rage of any man. He had fought for his liberty. Dr. Phipps had visited the house on many occasions when not required professionally, and had also been seen examining the rings at Woolworth's. The poet's household was maintained on his sister's private fortune, not on the revenue from his works.

Cross-examined by Mr. R. O'Sullivan, of the Middle Temple, counsel for the defendants, Mr. Postlethwaite said that he had at times read his poems to his sister, the cook, and the gardener. He did not agree that he had bribed them to listen; on occasions, when exhausted with the fire of declamation, he had refreshed himself with the gardener in the summer-house. The form of refreshment was gin. He took gin to assist him with his work. He worked a great deal. He had been attended by Dr. Phipps for gastritis, whether attributed to a bout of gin he could not say.

Miss Lottie Postlethwaite substantiated the facts of the case. She had sent for Dr. Phipps to see if anything could be done for her brother's fits of temper, because the cook had complained, and she did not wish to lose her. Geniuses were common, but cooks were not so common. She did not believe her brother had ever been insane at all. She was quite positive that there was a conspiracy, as he stated, to prevent the publication of his poems. She had not read any of them herself, but her brother had read them to her frequently. She admitted to 49 summers. Dr. Phipps had repeatedly proposed to her during the last nine months, and she had refused him. She had allowed herself to be guided by the specialist in signing the Urgency Order, but had refused to sign another Order at the end of the week.

Dr. Sigmund Waterman said that the patient had not been fit for examination before June 8th; such violence as he had shown in the asylum was consistent with the effects of hyoscine. There was no evidence that he had ever been insane. Cross-examined, he admitted that he was an admirer of the plaintiff's poems, and wished he would write some more.

The next witness, on being asked if he were the Rev. Josiah Pentwhistle, replied in the negative, and stated that he was a reincarnation of the prophet Isaiah. Counsel requested his lordship's ruling as to whether the evidence were relevant, as the individual appeared to be one over whom the Court could have no jurisdiction. His lordship admitted the point, but said he was loth to disallow the evidence as it promised to be interesting. The witness then deposed that he was a minister of the Fire Baptists. The doctrine of this body included the belief that every member of the sect was the reincarnation of some historical personage, and each aspirant to membership was required to appear in a public place with a bucket of boiling brandy on his head. The brandy subsequently became the property of the clergy. He did not himself write poetry, but might at times inspire it.

Evidence for the Defence.

The counsel for the defence submitted that there was no case at all against Dr. Phipps, since he had signed no paper, and asked for his lordship's ruling. Counsel for the plaintiff said that the case against Dr. Phipps was one of conspiracy, and hence the act of one was the act of both. His lordship thought it was better to allow the question to go to the jury. Mr. O'Sullivan continued the case for the defence by saying that it was based on Section 330 of the Lunacy Act, which protected medical practitioners from damages provided they had acted in good faith and with reasonable care.

Dr. Phipps deposed that he had attended plaintiff off and on for three years, and on one occasion for an attack of gastritis due to a bout of gin. He had thrown things at the cook before.

(In answer to a question by his Lordship: The same cook.)

Examination continued: There was no conspiracy between him and Miss Postlethwaite; she had never been asked to marry him. He had never inspected diamond rings at Woolworth's. His visits to plaintiff's house had been purely professional. He drew attention to his age, which was 29. He agreed with counsel that Miss Postlethwaite's belief in his ardour might be a delusion, and that delusions ran in families.

A Juryman: "Did you put any irritating questions?"

Dr. Phipps: "I examined him with regard to his mentality. He was certainly irritated."

Dr. Dementius Precox, on being asked if he were the celebrated alienist, replied, "I have made a special study of psychiatry." He would define delusional insanity as "a condition of mental disorder characterised by delusions." Violence was not an essential feature of it. He had made an entirely independent examination of the plaintiff, and had exercised the tact for which, he thought, he was well known. He regarded him as a danger to the household. He did not regard failure to secure publication of poetical works as a sign of insanity; nor would he so regard success.

Mrs. Flora Macdonald denied slamming the door, but admitted opening the window, and confirmed the remaining facts as far as they concerned herself.

Verdict.

His lordship, addressing the jury, outlined the working of the "Urgency Order" and the importance of invoking it only in cases of real emergency. He felt it his duty to inform them that he did not consider there was any case against Dr. Phipps.

The jury, after a brief discussion, found for the defendants.

Mr. Arthur Cheatle, President of the Listerian Society, thanked the Lord Chancellor for taking part in the proceedings.

Mr. Frederick William Salter, of Brough, Yorks, left, among other bequests, £500 to the Hull Royal Infirmary and £1000 (if his estate will admit of it after paying all other legacies) to the British Empire Cancer Campaign, 19, Berkeley-street, London, W. (or if his residuary estate shall not amount to such sum any balance up to that sum).

THE MOTOR SHOW.

DOCTORS who are having trouble with motor spirit are advised, when at the motor show, to take the opportunity of discussing the matter with representatives of the British Petroleum Co. (the Anglo-Persian Oil Co.). They should also visit Duckham's stall. Duckham's new process oil is an entirely new departure in lubricant distillation and has heat-resisting properties possessed by no other oil on the market. A special brand at a lower price is marketed for Trojans. Finally, the doctor who is considering the replacement of tyres should inspect the cord tyres shown by Messrs. Dunlop.

CIVIC HEALTH WEEK.

Two booklets, issued by the public health departments of large urban areas, are good examples of the advantage being taken by the sanitary service of using Health Week as an opportunity to preach the gospel of healthy living.

St. Pancras celebrated Health Week from Oct. 3rd to 9th. Dr. G. Sowden sets out to teach every member of every family, and expressly states that the booklet is intended to be kept and referred to all through the year. A number of the most common infectious diseases—measles, whooping cough, diphtheria, scarlet fever, tuberculosis, and summer diarrhœa—receive a page each of simple directions, not with any idea of enabling parents to dispense with the advice of a qualified doctor, but to help them to avoid serious mistakes and risks. Everything is stated in commendably short, simple sentences—e.g. :

Health is won by a way of life—not by a bottle of medicine.
Do not take a suspected case to the doctor or hospital or dispensary—if you do, other persons in the waiting-room may catch the disease.
Cold air is no more dangerous than cold water.

In Kingston-upon-Hull the most important feature of Health Week, held from Oct. 16th to 23rd, was a Health Exhibition in the City Hall, admission to which was by the booklet, at 1*d.* each. A large part of the exhibition was supplied by the Central Council for Infant and Child Welfare, with the organiser, Miss M. H. Keating, in charge. A message was broadcast by Dr. W. Allen Daley, M.O.H., health talks were given, plays were performed by school children, and no less than 25 different health films were shown. There were also open days for visits to various health institutions, public and private. The object of this booklet is, first, to interest people in the exhibition, a full programme of events being included, and, secondly, to bring home to the citizens of Hull all the facilities existing for their help. Short illustrated accounts are given of such items as the municipal maternity home, a maternity and child welfare centre, the sunlight clinic, the city laboratories, a school for physically defective children, the tuberculosis after-care colony, and many other provisions of the public health department.

A beginning has been made in Liverpool with what promises to be a useful development in the campaign for the more intelligent interest in and coöperation with the work of public health authorities on the part of the mass of the citizens. Taking advantage of the "Civic Week" celebrations, the medical officer of health organised a series of lantern slides demonstrating the manifold activities of the local sanitary officers, not only in those departments which touch the daily life of the man in the street, but also in those wider fields of international medicine which are of the utmost importance in the life of a great sea-port. There was also shown a collection of models illustrating the housing problem and the treatment of slums. The opportunity was taken, too, of demonstrating some of the child welfare branches of the medical officer's department.

Last week, under the auspices of the Women's National Health Association, a "Health Week" was held in Dublin, where a number of lectures dealing with various aspects of the public health were delivered at the several babies' clubs throughout the city. In connexion with the campaign, an address on "Voluntaryism in Health" was delivered to the Dublin Rotary Club by Mr. E. P. McCarron, Secretary of the Department of Local Government and Public Health. He said that the importance of domestic and general sanitation had become more clearly understood, and a noticeable improvement had taken place in general cleanliness. The mean average rate of infant mortality for the Irish Free State had come down from 82 per 1000 in 1914–18 to 69 per 1000 in 1925, a fall largely, if not mainly, referable to the beneficent activities of maternity and child welfare schemes and other educational agencies. Special attention had been paid by the department and by local authorities to the correction of deformities in children. In regard to milk, considerable improvement was noticeable in most districts; milk-borne epidemics of enteric fever, at one time of constant occurrence, were now practically unknown. The death-rate from non-pulmonary tuberculosis associated with infected milk showed a decrease of 47 per cent. since 1904. New cleansing methods had been introduced; dust and dirt were being rapidly eliminated; the domestic phase of electricity was being developed. Best of all, progress in housing had been greatly accelerated. The Local Government Act of last year had abolished the wasteful and ineffective rural sanitary units. In another address delivered later in the week, Mr. McCarron stated that medical inspection of school-children would be undertaken at once when the new county medical officers of health had been appointed. Deputy T. Hennessy, F.R.C.S.I., in an address dealing mainly with the milk-supply of Dublin, stated that the milk produced in Dublin itself was derived from first-rate cows, kept under good conditions, but there was no control over the production of the inferior milk that reached Dublin from outside.

PUBLIC HEALTH IN NYASALAND.

THE Protectorate is divided for administrative purposes into four provinces—the Zomba, Southern, Central, and Northern—each of which is in charge of a commissioner. The chief towns are Blantyre, Limbe (near Blantyre), and Zomba (the seat of the Government). At the end of 1924 the European population was estimated at 1462, the Asiatic at 669, and the native population at 1,210,344. The admissions of Europeans to hospital were 192 in 1925, as compared with 147 in the previous year, whilst 451 were attended as out-patients, as compared with 559 in 1924. There were 3539 natives admitted to hospital and 115,690 treated as out-patients, as against 2842 and 114,043 respectively in 1924. Two cases of sleeping sickness in natives were admitted to hospital and both died. There were no cases of plague reported, and only one case of small-pox. There were no serious epidemics during the year.

The climate of Nyasaland in its essential features is similar to that of the rest of Eastern Africa within the tropics. As a large proportion of the Protectorate lies at an altitude of 3000 ft. or more, the heat is not generally excessive. The monsoon commences to blow strongly in September, and the first rains may be expected any time after mid-October. From their commencement to the end of December it is usual to experience violent thunderstorms and heavy precipitation in a few hours, followed by an interval varying from 1 to 15 or 20 days of intense heat. With the return of the sun from its southern limit of declination, the thunder-storms diminish in intensity and frequency, and are replaced by steady rain—January, February, and March being usually the wettest months as regards duration of rainfall as well as actual amount. After March the frequency and intensity of rainfall diminish rapidly, and from May to September the climate is comparatively cool and dry.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED OCT. 16TH, 1926.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 132 (last week 121); scarlet fever, 1839; diphtheria, 1166; enteric fever 75; pneumonia, 744; puerperal fever, 51; puerperal pyrexia, 129; cerebro-spinal fever, 5; acute poliomyelitis 62; acute polio-encephalitis, 16; encephalitis lethargica 33; continued fever, 1; dysentery, 12; ophthalmia neonatorum, 143. There were no cases of cholera, plague or typhus fever notified during the week. The cases of poliomyelitis and polio-encephalitis are the subject of comment in an annotation. One case of small-pox was again reported from the London area, the remainder as before from the northern counties.

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox, 1 (0) from enteric fever, 9 (0) from measles, 2 (0) from scarlet fever 16 (4) from whooping cough, 39 (13) from diphtheria, 171 (28) from diarrhœa and enteritis under 2 years, and 38 (6) from influenza. The figures in parentheses are those for London itself.

CIVIL VITAL STATISTICS.—The Registrar-General's Statistical Review, 1925, Tables, Part II., Civil (price 5*s.*), is now on sale at H.M. Stationery Office. The review estimates the population of England and Wales on June 30th, 1925, as 38,890,000 against 38,746,000 in 1924, an increase of 144,000. The births registered in the year 1925 totalled 710,582, representing a rate of 18·3 per 1000 population which was 0·5 per 1000 below the rate for 1924, and with the exception of the war years 1917–18 the lowest recorded. Excepting the war years 1917–19 the number of births is the lowest number registered in any year since 1861. The proportion of male to 1000 female births was 1045. This proportion showed a great increase during the war years and reached a maximum of 1060 in 1919, since when, with one exception, it has shown a continuous decline, but is still above the proportions recorded since 1860. The deaths numbered 472,841 and corresponded to a rate of 12·2 per 1000, the same as for the previous year, but 0·6 more than that for 1923, which was the lowest on record. The marriages registered in England and Wales during the year 1925 numbered 295,689, corresponding to a rate of 15·2 persons married per 1000 of the population, and show a decrease of 727 over 1924.

Bradshaw Lecture

ON THE

THEORY OF DIAGNOSIS.

Delivered before the Royal College of Physicians of London on Nov. 4th, 1926,

BY F. G. CROOKSHANK, M.D., F.R.C.P. LOND.,

PHYSICIAN TO THE PRINCE OF WALES'S GENERAL HOSPITAL AND TO THE FRENCH HOSPITAL AND DISPENSARY; CONSULTING PHYSICIAN, NEW END HOSPITAL, LONDON.

Verumtamen praesentium cognitium proprie nomine *diagnosin*, hoc est dignotium, appellare consuevimus.
—*Galen* (18–2–24).

PART I.

MR. PRESIDENT, FELLOWS OF THE COLLEGE, LADIES AND GENTLEMEN,—My first duty is to acknowledge the responsibility, cast upon me by your late President, of commemorating the professional and domestic virtues of him whose sorrowful relict became, in 1880, our eponymous benefactrix. This responsibility is, however, not unmixed with gratification, for I succeed, *sed longo intervallo*, one whose memory should still be green within these walls—Dr. Vivian Poore who, in 1881, gave here the first Bradshaw lecture.

Amongst the Fellows of this College there have been not few more learned in the history of our art and of our science; there have been others more nicely versed in the subtleties of some narrow specialism; and there have been many who have commanded greater recognition. But they have not been many who have better earned the right to be called *Physician;* one whose practice is broadly based upon an intimate acquaintance with Nature, the kind parent of all things. His humanity, his wit, and his sagacity, were gifts not often possessed in such measure by those who obtain greater immediate reward but perhaps exert less lasting influence. I am grateful for the opportunity of saying how much I owe to him.

MEDICINE AND SCIENCE.

By the terms of the Bradshaw Trust, the subject of this lecture must be connected with medicine or surgery; and I have chosen for my theme the Theory of Diagnosis, believing that none other can be more proper either to medicine or to that part thereof we call surgery. Indeed, to diagnosis even therapeusis must yield pride of place, for, in the quaint words of Hart, written in 1625, ancient physicians "did . . . divide Physicke principally into two parts, to wit, that which we commonly call Therapeuticke . . . and that part which we call Diagnosticke, whose most common scope is to discerne the whole and sound from the like and the sick and infirme from the whole, being unlike the one to the other. And this part of Physicke doth farre excell the other, to wit, the Therapeuticke, the which without the Diagnosticke is of small use and profit."

Formerly, the greatest masters of scientific method—as Harvey himself—were accustomed to interpret their observations in the light of those fundamental principles that make up the very matrix in which all true sciences are formed. But the separation between philosophy and natural science that marked the close of last century became so wide that, although reaction has set in, and many are now eager to discuss the general validity of scientific conclusions, medical men are still prone to assert that medicine as a science stands, and must ever stand, upon a so-called solid base of observed fact and planned experiment, in complete dissociation from all mental discipline as such. It is in sympathy with this attitude towards inquiry into the mental processes by which we obtain our "facts" that all trace of metaphysics, logic, and philosophy has disappeared from medical education since, in becoming more medical, it became less educative. Profoundly dissatisfied, Dr. Mercier wrote, ten years ago, that, while the fundamental concepts in every calling are the most difficult to define, and the definition of them is not arrived at until late in the history of that calling, nevertheless in every calling a time must at length arrive when such definition is needed, and that such a time is now arrived in the history of medicine. Now medicine, so far as itself a science, is (as Hobson says natural science is in its every stage and its every department) a conceptual scheme and not a perceptual intuition. The need for clear definition of the integral concepts of medicine is, therefore, at least as imperative as is the practice of that indirect or analogical form of observation by experiment, which to so many seems to afford a more solid "basis of fact" than does direct observation at the bedside or in the field.

It is necessary to insist upon the conceptual aspect of medicine as a science, for—again to quote Hobson—in modern times until recently most men of science have been dominated by the philosophical theory of knowledge—essentially unnecessary to scientific method—known as physical realism. The influence of this theory is never more prejudicial than when unconsciously sustained by those who loudly proclaim the freedom of medicine from philosophical thrall!

No further excuse seems needed for an attempt to say what we have in mind when we speak about "this so noble a part of Physicke" and to give an account of its theory—that is to say, to explain it, by appeal to first principles in terms that are independent of medical doctrine. But if success is to be obtained—and by success I mean not finality but the clarification of thought—we must give ear to Galen and "come to agreement quickly about Words, getting soon to the Things themselves, and spending on these only our time and trouble, for most of those who call themselves educated do otherwise, and so do never perfect their Art." (7–43, 44.)

Important though it be to distinguish between words and things, it is no less so to distinguish between the words by which we tell our thoughts about things: these thoughts, and the things that are thought about. This triple distinction between what I have called names, notions, and happenings—or, as Messrs. Ogden and Richards say, perhaps with greater propriety, words, thoughts, and things—should be maintained during every discussion. We should, therefore, think separately of *diagnosis*, the name, or verbal symbol: of the notions for which this symbol has stood, and the explanations thereof; and of the processes concerning which these notions and explanations have been entertained. In so doing we follow the injunction of William of Occam, the greatest of English philosophers, and choose always the *suppositio* beneath the word; whether the word be employed physically, or *materialiter*, *pro voce;* conceptually, or *simpliciter*, *pro intentionae animae;* representatively, or *personaliter*, *pro re*. This is what Ogden and Richards intend when they speak of the word or symbol, standing for a mental *reference*, which itself represents the *referents* we observe or think about.

DIAGNOSIS: THE NAME.

The Greek word *diagnosis*, with its congeners, is infrequent in the Hippocratic Collection, though less so than may be thought, since some translators have avoided the use of exact equivalents, apparently because the full Greek meaning is not always conveyed by them. Recourse has been had to periphrasis; and the suggestion that the modern English usage of the word is not that of the Greek has been avoided. Without doubt Dr. Withington—to whom I am more than indebted—is right when he says that, in the Greek, the connotation of the particle *dia-* in *diagnosis* is at least as intensive as discriminative; his view is supported by the fact that though no formal definition of the word appears in Hippocrates, Galen, in whose writings it is exceedingly common, does define it (in the "Commentary upon the Prognostics of Hippocrates") as the clear cognition, or *gnosis*, of things present (18–2–24). So, too, when he declares that it took him long to make the fundamental *diagnosis* of the pulse—that the artery not merely rises and falls, but expands (8–771). Later writers seem to have used the word mainly in copying from

Galen and, although *dignoscere* is in Virgil, it is said not to occur in Salernitan translations or in mediæval writings generally. I have not seen it in any Latin work earlier than the last part of the sixteenth century, when its revival was probably due to renewed acquaintance with the Greek of Galen. (Withington.)

Diagnosticke we have seen as an English substantive in 1625 (Hart), but *diagnosis* does not occur till 1681, when Pordage, in the glossary to his translation of Willis, defines it as *dilucidation*, or *knowledge*. Later, the word does not appear to have been greatly used for nearly a hundred years, and then somewhat differently. In 1731 de Sauvages had attempted to classify diseases as if they were indeed objects or groups of objects in nature: in Sydenham's words, "to be reduc'd to certain and determinate kinds, with the same exactness as we see it done by botanic writers in their treatises of plants," and possessing "certain distinguishing signs which Nature has particularly affixed to every species." Faber has shown how Linne, fired with enthusiasm, applied to diseases his own aphorism, *Species tot sunt diversae quot diversae formae ab initio sunt creatae*, and caused a "Genera Morborum" to be compiled for the use of his own pupils. The fashion spread, and in 1771 a new era in modern medicine commenced when Hélian published his "Dictionnaire du Diagnostic, ou l'art de connaître les maladies et de les distinguer exactement les unes des autres."

Now whatever we may hold a *species* or *genus* to be, no disease is a discrete object of perceptual experience in the way that a single plant is, and, while much may be said on grounds of convenience for classifying the various kinds of illness we recognise, the implication that *diseases* are species of classifiable entities and that the art of diagnosis only came into existence after their recognition as such, is a consequence of our failure to follow Harvey's example and to inquire, with Aristotle, whence and how knowledge reaches us. Moreover, we cannot accept the identification of a process with one of its own modalities as a definition of that process. Now although Cullen in 1772 introduced into Scotland a systematic nosology based upon symptom-complexes, and Price in 1791 published in London a "Treatise on the Diagnosis and Prognosis of Disease," or, as Forbes gives it, *Diseases*, English physicians, on the whole, long regarded diagnosis as a process applicable to persons rather than to diseases, and displayed little enthusiasm for the botanical classifications of de Sauvages and his followers and the specifist doctrines of the later French Organicists headed by Bretonneau and Laënnec. Nevertheless, in Forbes's translation of the latter's famous "Traité" (1834) we find such a phrase as "the diagnosis . . . . of pneumonia," and the advantages of classifying clinical phenomena and creating diseases by the correlation of sign-groups with post-mortem patterns, in the style of Laënnec, became so appreciated that for many years to interpret in terms of specific diseases was almost the only duty of the diagnostician. Thus, in 1882, the New Sydenham Society's "Lexicon" laid it down that diagnosis is the distinguishing of things, the noting of symptoms, whereby a disease or plant *or other object* may be known for what (it) is and not another. The following year Hecht, in the "Dictionnaire Encyclopédique des Sciences Médicales," defined diagnosis as "cette partie de la pathologie qui a pour objet la distinction des maladies entre elles," a definition persisting so lately as 1904 in Dunglison's "Dictionary of Medical Science," which states diagnosis to be that part of medicine whose object is the recognition or determination of the nature of diseases and the knowledge of the pathognomonic signs of each. By the "New English Dictionary" diagnosis, in the medical sense, is said to be the determination of the nature of a diseased condition, or the identification of a disease by careful investigation of its symptoms and history, together with the opinion, formally stated, resulting from such investigation. The same dictionary gives the general, or biological meaning as "distinctive characterisation in precise terms." That it is characterisation that is of the essence rather than characterisation in terms of any particular convention is implied by Dr. Christian when, in the "Oxford Medicine," he writes that diagnosis depends upon a proper evaluation of signs and symptoms recorded by all available means and interpreted with the critical judgment of a large common sense.

Thus do we return to Galen's definition of diagnosis as the clear cognition of things present, and to the right to employ, without doctrinal or conventional prejudice, this word which, first used by the Father of Medicine, has been absent from literature during long periods of time, and to-day is more than ever conspicuous in our verbal equipment.

DIAGNOSIS: THE EXPLANATIONS.

It is disappointing to the student of medicine to find during the last 150 years—a period coterminous with what Singer calls the Reign of Law—so easy an acceptance of linguistic subterfuges which, however convenient when teaching students, are yet responsible for much confusion in the minds of students grown to be teachers.

In former days the physician brought to medicine a mind trained in the theory of knowledge: like Galen and Locke, he made contributions thereto. Diagnosis was then the application to the field of medicine of a method of thought already learned. So, when in the sixteenth century such physicians as Fernel discussed the first principles of all science in their Institutes of Medicine, the theory of diagnosis flowed naturally therefrom and called for no separate discussion.

In the nineteenth century the case was altered. Together with a distrust of logic and philosophy, and a strange belief that science alone gave a sure foothold, there grew up a desire to contain medicine within a cincture, and to-day many a student obtains no better idea of diagnosis than that it is what we do when we encounter a disease: and of a disease, than that it is the sort of thing we diagnose when we encounter it.

Of course, so long as Sydenham's pleasant fancy was accepted as a premise—and it was believed that there are in Nature objective and real, even if immaterial, entities called diseases, denoted by fixed characters and, *ex hypothesi*, the proper subject of diagnostic studies—for so long was it impossible to define diagnosis otherwise than as the art of distinguishing between them. This premise is even yet not decisively repudiated, but, unfortunately, when the nosological systems still perpetuated in our "Official Nomenclature of Diseases" first became rife, those who, like Jeremy Bentham then combated the errors of physical or scholastic realism, had not sufficient technical interest to develop the application of their arguments to medicine, whilst Marshall Hall, in his book "On Diagnosis" (1817) merely said that the diagnosis of *diseases* constitutes the foundation of the practice of medicine, and such medical logicians as Lanza (1826) cared more to undertake medical research, as they called it, by ratiocination than to discuss so humdrum a process as diagnosis appeared to be.

Even Oesterlen, of Heidelberg, whose "Medical Logic," translated by Whitley in 1865, ably exposes the vice of treating names of diseases as if representing existent objects, finding diagnosis fallen amongst thieves, passed by upon the other side and spent energy in a laboured attempt to torture medicine into compliance with the Procrustean demands of Mill's Science of Inductive Logic, or Inductive Philosophy, as it was called. Perhaps in medicine we still tend to use the word *induction* emotively rather than intelligently, and without any clear logical connotation!

At any rate, Barclay, who, in his "Medical Errors" (1864), spoke of the "positive induction that forms one of the elements of the deductive argument by which we arrive at the true diagnosis of disease," tried hard, in his "Manual of Diagnosis" (1857–70), to analyse diagnosis in terms of the prevailing logic, and suggested that the best method of teaching it

was to lay down rules whereby the student might distinguish the diseases described to him in the schools. He never questioned the adequacy of the heroic attempt to resume or group all clinical phenomena in terms of diseases only, or the permanent validity of the nosological distinctions in vogue at the time of the Great Exhibition. Still less did he appreciate the exercise of the diagnostic art by the greatest physicians of all time long before the promulgation of these distinctions, and we receive, in some sort, the impression of an excellent photographer of the period who, writing about Art, ignores the efforts of Phidias and Leonardo in their regrettable lack of acquaintance with the technique of the carte-de-visite and the dry plate.

The truth is that Barclay, whose text-book long remained deservedly popular, had no inkling of the scholastic doctrine of *ficta*, revived in these latter days to teach us that the primary concepts of the physical sciences are subjective interpretations, justified by their convenience and the measure of common assent that they may obtain, but not as perceptions of reality. And so, again girdling medicine with her own zone, he explained diagnosis as the application to any particular case of the lessons taught by semiology and nosology; much as we might define literature as the application to a particular theme of the lessons taught us by caligraphy, dactylography, stenography, and typography!

The professed logicians were not more happy than the logical doctors in their dealings with this subject. Bain (1870), like others, ignored routine diagnosis and, whilst condemning realism in the scholastics, showed himself, like many philosophers, a realist in medicine, giving rules for the naming of diseases which (he said) are generally localised in separate organs or tissues. To Jevons (1877) diagnosis was the operation of discovering to which class of a system a certain case or specimen belongs, an operation performed by the serial rejection of the infinite classes with which the case does not agree. We still do nominal honour to this scholastic operation implying the reality of classes, when we speak of diagnosis by exclusion; but Jevons did not care to examine what generally happens. He set out what people would have to do in order that logicians might say they were behaving in the way they ought to do. And he ended by believing that they did so.

For many years after Jevons the question was not reopened. But, since the South African War, many books have been written professedly devoted to diagnosis as the most important part of medicine. These books give excellent schemes for the physical examination of the patient, whilst strangely ignoring, almost completely, the psychical. The materials are arranged semiologically or topographically rather than nosographically, and all allusion to therapeutics is foregone. But they agree with text-books of medicine generally in avoiding all discussion of first principles, and, so far as possible, any attempt to define disease or diseases, and any hint that the nosological convention represents only one method of diagnosis. Such attempts as are made to define diagnosis are usually either descriptive or involve an obvious *circulus in definiendo*. Thus, one author tells us that diagnosis is prerequisite to accurate prognosis and effective treatment, so that the true end and aim must be the earliest possible recognition of any disease (1922); a second, that diagnosis is the method of distinguishing from one another diseases that have symptoms more or less alike (1925); a third, that a correct and integral diagnosis is the *sine qua non* of rational therapeutics and one that conforms to reality, as shown by the evolution of the malady, the success of the treatment, and the findings at the necropsy!

However, three determined efforts have been lately made to grapple with the subject, and all hail from North America. Dr. Stanley Ryerson gives a clear method of case-taking, but attempts once more to explain diagnosis in terms of inductive logic. Yet, since Mill himself defined induction as the process by which what is true at certain times or of certain individuals, is inferred to be true in like circumstances at all times or of a whole class, it is difficult to see how diagnosis can be said to be an induction or an inference from known particulars to an unknown general. There is a better logical case for speaking of diagnosis as *deductive* for frequently, though quite wrongly, some diagnosticians persist in inference from an assumed general to a present particular! Dr. Llewellys Barker, in the "Oxford Medicine," says rightly that in bygone days there was, as now, recognition by only a few that groupings of signs of illness are conceptual and to be changed when the purpose changes. But we feel the ghostly presence of the Victorian realists and logicians as we turn Dr. Barker's many informative pages and trace the steps we are told we take, or ought to take, when we tread the path of diagnosis.

We learn to distinguish the philosophy, the science, and the art of diagnosis, and are told that, in the application of the science to the art, there being recognition of a problem to be solved and a feeling of diagnostic difficulty, data are accumulated, the anamnesis is recorded, and the *status praesens* investigated, while the catamnesis and epicrisis are duly noted so that, data being summarised and arranged, diagnostic suggestions are considered and, hypothesis not being undervalued, fundamental relations are thought of and elaboration by reasoning, submitted to testing, is guided towards the end. But what is this end—the final cause, in Aristotelian phrase—of diagnosis? It would almost seem, from what Dr. Barker tells us, that diagnosis is the function we discharge when, a diagnostic difficulty being felt, we decide between diagnostic suggestions in order that we arrive at diagnostic conclusions—a solution reminiscent of Raymond Lully when he said that the digestion is the form by virtue of which the digestive digests the digestible!

Dr. Warren T. Vaughan very nearly hits the mark when, in a modest essay that avoids all sophistication, he compares the act of diagnosis to a detective enterprise. For the detective, employing no formal logic or scheme, reasons as does every man in every hour of his life; making use of his acquired knowledge and experience, he interprets what he observes by means of his commonsense. But this is what Dr. Christian says the diagnostician does. In other words, and if we may talk of faculties, the detective and the physician alike exercise what Sturt calls some common constructive or reconstructive faculty and do *not* adopt any of the rationalised methods that logicians and novelists say they do.

In Rignano's language play is given to two fundamental activities—the one intellectual, the other affective. Images of the past are evoked by the present, and the mind seeks the satisfaction that is attained when a judgment that well serves our purpose is achieved. More simply still, diagnosis is just the first stage of the physician's work, the process of forming and expressing those judgments concerning the present state of the sick that guide us in our office of healing; and it consists in observation of the sick, interpretation of what is observed, and symbolisation of the interpretations accomplished.

DIAGNOSIS: THE PROCESS.

Thus considered, diagnosis ceases to be an esoteric process for finding out "what is really the matter." We do not confuse it with any particular diagnostic convention, or assume that they who do not diagnose as we do do not diagnose. We appreciate that it is not governed by strict rules or comparable to the identification of a postage stamp by reference to a collector's catalogue. Finally, we proceed to investigate diagnosis by the methods of psychology, recognising that, like logic, it is a matter for psychologists rather than for the logicians who have so dismally failed us at their own business. This being so, we come to regard diagnosis as a kind of reflex process which, regarded subjectively, resolves into three members, whereof one is perceptive or observational, another associational or interpretative, and the third efferent or symbolising. Thus every response to injury becomes at once a reflex and a diagnosis;

and the reparative process, once regarded as something put forward by a *vis medicatrix Naturae*, is better understood as the effective symbolisation by the organism of the cognisance that it takes of the lesion. The salamander who, its tail being removed, sets about and grows a new one, and the cat, who, feeling ill, seeks and finds the grass that cures, both make diagnoses that may be instinctive but are perfectly adequate to the occasion! The surgeon may reply that one salamander cannot grow a new tail for another, and the salamander may retort that the surgeon cannot grow a new leg even for himself! Still, both salamander and surgeon, like all living creatures, exercise diagnosis in their own measure and according to their own opportunities!

Moreover, Signorina Locatelli has lately shown that the reparative powers possessed by newts are exerted through the nervous system in such fashion that we have to reckon with not only a generalised tendency to repair, possessed by every tissue and by every cell —whereof (as Prof. Leathes has recently said) the persistence is by definition required for the very maintenance of living existence—but a specialised regional reflex system which, for some creatures, assures the reproduction even of a limb. May we not inquire, then, if some healers, even though "unqualified," do not possess some instinctive diagnostic and healing faculty that finds expression practically rather than verbally, but *for others*; a faculty analogous to the instinctive mathematical gifts of the strange calculating boys? At any rate, the observable diagnostic series seems to extend, with gradual transition, from the so-called instinctive and selfish processes of the lower animals to the highly rationalised, and, of course, altruistic judgment-formations of the medico-legal expert, so that the only convenient criterion, restraining the word diagnosis to forms of human endeavour, is that of verbal expression or symbolisation. We are, then, burdened with the task of distinguishing between rational and irrational or—what is not the same thing—orthodox and unorthodox symbolisations.

However, recognition of this evolutionary aspect of diagnosis—stressed by Martinet when he said that "les degrés divers actuellement réalisés par la science diagnostique reproduisent les étapes mêmes de l'évolution diagnostique au cours des âges"—carries with it an obligation to undertake comparative studies that has been insisted upon by Masson-Oursel, though it was Rivers who first pointed out that some primitives practise an art of medicine more rational than ours, in that their modes of diagnosis flow more directly from their ideas concerning disease.

It is, at first, shocking to be told that diagnosis may be at least as rational and as practical when stated in terms of demons as in terms of diseases, yet a dose of castor oil is indifferently efficacious whether a demon or a disease be held responsible for the symptoms, while there is a closer affinity than may be thought between those who believe in specific demons and those who talk about the specific clinical entities that "attack the human race." It is certainly remarkable that, at the stage of human progress when, as Bordeu said, a natural medicine is practised that is comparable to natural religion, there should be clearly marked two diagnostic trends that are traceable throughout the whole history of medicine and that persist to-day amongst us.

Rivers found, diffused throughout America, Indonesia and Papuo-Melanesia, the notion that disease is an abstraction or loss of the soul, or vital principle, or a part thereof; in India and in Africa the belief that disease is due to a something added—a spirit or a demon. Clearly we have here a hint, and more, of the secular controversy between those who find in disease an impairment or failure of functional activity or adaptation—the Vitalists, who regard disease as an accident or *aliquid entis*—and the Organicists, who explain all disease worth their attention in terms of physical attack on organs, and consider each described disease to be an entity, or *ens*. This controversy is indicative of a dichotomy that has ever vexed medicine since first practised (as we say, rationally) some 2400 years ago—a dichotomy that has sometimes seemed best indicated in terms of practice, sometimes in those of doctrine, and again in those of philosophy.

Sometimes, perhaps, the difference has been obscured by the apparent inconsistencies of the greatest physicians who, like Galen and Sydenham, have seen something of the truth in each side, have attempted to reconcile the contending opposites, and have been claimed by each party in turn. But always the difference has been one that is best *stated* as a difference in *method* of diagnosis—that is, in observation, interpretation, and symbolisation—and is best *comprehended* as dependent upon fundamental psychological divergences.

These divergences are of more than medical interest, for in some sort they affect all mankind. They are allied to those which separate the romantics and classics of literature, and, perhaps, also Ostwald's romantics and classics of science, as well as the introverts and extraverts of Jung; they are, perhaps, those which Coleridge had in mind when he said all men are either Aristotelians or Platonists, and which architects divine between the Gothic designers who build from within outwards and the classics who plan from without inwards. That such divergences should obtain in medicine is only to say that physicians are as other men; but that laymen are likewise divided in respect of diagnostic outlook was well shown, a few years ago, during the course of public discussion concerning the alleged diagnostic inefficiency of doctors!

Mr. G. B. Shaw then declared that diagnosis is not the mere affixing of a nominal label, but the finding out all there is the matter with a patient and why; the editor of the *Westminster Gazette* pleaded eagerly for the establishment of a diagnostic caste, whereof the duty should be to affix the proper label and pass the patient on to him who should treat the disease nominated. Herein Mr. Shaw ranged himself definitely with the Vitalists—best represented for us by the tradition of Cos: his colleague as definitely set himself amongst the Organicists of Cnidus—the spiritual home of all who manifest exact nosological proclivities and diagnose diseases rather than patients.

The elderly practitioner who, remote from libraries and from laboratories but near to Nature, is hesitant when asked for verbal diagnosis in terms of recent convention, yet clear in action, is in like fashion opposed to his more formal colleague who, diligently making a diagnosis in strict accordance with differential tables and tests, searches his text-books in confusion for the treatment appropriate to the disease he suspects. Wherein lies the fundamental difference between these two diagnostic attitudes?

All men, when about to interpret what is presented in consciousness, proceed in one of two ways. Some interpret the present by reference to images of past experience stored simply as memories, or as composites of like memories. Others compare present perceptions with mental constructs, made up of memories of like past experiences, but *colligated* (in Whewell's phrase) by something predicated, abstracted, or imagined which, linking them together, converts mere aggregates or composites into organised units that we call ideals, general terms, or universals—just as a colligating staff transforms a thousand men into a battalion. Herein is the difference between the two types of diagnostician —a difference that carries with it many correlations but corresponds closely to what Mr. Trotter has lately recognised as that between the direct or concrete and the indirect or abstract methods of thought.

The simple composites of *natural* diagnosticians—for whom the definition of diagnosis as clear cognition will suffice—are the *syndromes* of the post-Hippocratic empirics; as Hart said, nothing else but the collection of certain *accidents* and *circumstances* of disease. The mental constructs of *conventional* diagnosticians—for whom diagnosis must establish correspondence between the illness of each patient and some rationalised type —are, as a rule, diseases, but may be demons.

(The bibliography to Part I. will be given with Part II. in the next issue of THE LANCET.)

Thomas Vicary Lecture

ON THE

SIGNIFICANCE OF ANATOMY.

Delivered at the Royal College of Surgeons of England on Nov. 4th, 1926,

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IT may seem strange that in this Museum where the Hunterian Collection is housed I should discuss such a subject as the significance of anatomy, the scientific and practical value of which as the essential foundation of surgery John Hunter surely established once and for all. But no one who is familiar with the attitude towards morphology which is widespread at the present time can doubt that there is need for an appreciation of the part the study of anatomy has played in the history not only of biology and medicine but also of civilisation as a whole, and the even greater services it still remains for the morphologist to achieve.

At the present time it is not only the physiologists and clinicians who question the value of morphology, but some anatomists also and even more biologists bow the knee to the strange fashion of depreciation. In some famous medical schools it is considered almost an offence on the part of an anatomist or biologist to devote himself to the essential business of his subject, and work at real anatomy. The interest and importance of experimental embryology and the fascination of this method of interrogating the processes of Nature are unquestionable. But even the fullest recognition of the value of such work and of the brilliance of its pioneers does not lend any sort of justification for the strange assumption that anatomists who devote their attention to other no less important parts of their subject are wasting their time to obsolete diversions.

The true history of this phase has been so correctly diagnosed by Prof. H. S. Jennings, of the Johns Hopkins University, that I make no apology for quoting him. Referring in *Science* (July 30th, 1926, p. 98) to anatomy as the "physics of organism," he said:—

> "It requires separate consideration, both because of its extreme importance for zoological experiment; and because it was minimised, nay, despised and rejected of the physiological impulse in zoology. This is the rôle of physical arrangements of material in organisms; gross physical arrangements as well as minuter ones; what is variously called organisation or structure. Structure had become the object of one of those epidemic phobias that beset scientific men as they do other men. In the days before experimentation, zoologists had given a romantic and mystical turn to the phenomena of structure in organisms; they built upon it a great edifice which was called morphology. They discovered in organic structure plans, styles comparable to the diverse styles of architecture; to Gothic, Romanesque, Classical, and the rest. But the physiologists said: This may be pretty, but is it Science? It is not. Out with it. We shall have nothing to do with morphology; it is fantastical. And throwing away the baby with the bath water, they largely rejected also the rôle of structural arrangements, even in experimentation. This it was that led to most of the adventures or misadventures of the sort I have recounted, in the progress of experimental zoology. It is important that this phobia should no longer dominate our work. Consider for a few moments the rôle of arrangements or organisation in experimental work, and the consequences of its neglect.
>
> Structural arrangements, organisation, is, of course, physics; we find it playing a very great rôle in physics as that science advances. The properties of atoms depend upon the arrangement of electrons, of molecules on the arrangement of atoms, of crystals on the arrangement of molecules. In organisms there is a great extension of this. They are bodies in which the arrangements have become complex and differentiated, and have passed into the grosser, the visible features as well as in the finer details. They are bodies in which there is an almost infinite variety of these arrangements, as we pass from species to species. They are systems of structures. In consequence their properties and the way they respond to experiments depend largely on these systems."

This address so admirably explains the real significance of morphology as the foundation of all science, physical as well as biological, that it is hardly necessary for me to add to it. In particular he has shown how many veins of experimental research have petered out. Many of the problems were suggested by morphological considerations and most of the results do not attain conclusiveness until they find confirmation from anatomical evidence. For example, Sir Charles Sherrington's definition of reflex action, the summary of an extensive chapter of physiological experimentation, is expressed in terms of the structures involved. The disparagement of anatomy extends also to morbid anatomy, and at the present time in many schools, with a few conspicuous exceptions, medicine and surgery are suffering from the neglect of adequate morphological tests of the reasons for diagnostic and therapeutic failures.

The eponymous label attached to this lectureship is not without interest. Thomas Vicary was the court surgeon of the Tudor kings and queens, and he left behind him an obsolete treatise on scholastic anatomy, based upon the writings of Lanfranchi and Mondeville in the fourteenth century, which completely ignored the revolution that had been effected in the whole outlook and discipline of anatomy by Vesalius 20 years before Vicary's death. Like Thomas Vicary, the anatomist at the present day has retained in his teaching an undue amount of mediæval method and material that has no justification either on the ground of its practical or scientific value. In paying respect to these antiquated conventions—the writings of earlier bookmen rather than what the human body itself reveals—he has neglected the great opportunity of bringing the subject of anatomy into closer corelation with the needs of the times. In spite of the century-old complaint that there is nothing more to be done in anatomy—as Barclay said in the eighteenth century: Anatomists are like geese picking up the stray grains left by former reapers—the possibilities for great achievements in anatomy were never so great as they are to-day; and the need for men who will devote their whole time and energies to the exploitation of these rich veins of ore was never so urgent as it now is in England. It was a great step forward when a generation ago men were appointed to devote their whole time to research and teaching in anatomy. The problems to be solved are so complex and the technique of inquiry so exacting that those who work at the subject must be wholly absorbed in it.

[After summarily describing the development and course of anatomical study from the Ptolemaic School of Alexandria to Galen, Prof. Elliot Smith referred to the special influence of the work of such anatomists as Harvey, Sharpey, and John Hunter. He continued:—]

The late Mr. Stephen Paget refers to the work of William and John Hunter on the lymphatic system as a new truth of vast importance, second only to Harvey's discovery of the circulation of the blood; and in estimating its significance he uses the words so many writers have applied to Harvey's achievement: "It changed the whole character of medical science and practice." That the lacteals, which carry food-products into the blood, were absorbent vessels, men knew already; but they had not realised that the whole body, every organ and tissue of it, is penetrated and drained by a special system of vessels to bring the fluids in the tissues back into the

blood stream. It is not necessary for me to say anything to impress upon this audience the importance of the lymphatic system in surgery and the value of the pioneer work of the Hunter brothers. A vast amount of detailed work on the lymphatic vessels and glands has been accomplished in recent years and valuable light has been shed, especially by our American colleagues, upon their developmental history. But the satisfactory solution of the controversies that have arisen as to the interpretation of the meaning of these observations will not be attained until we return to comparative methods and study the phylogeny rather than the mere ontogeny of the system.

The brilliant research on the lymphatic system of *Lophius* that has recently been accomplished in this Museum by the Physiological Curator, Mr. Richard H. Burne, is an encouraging sign that this great work is being carried on in its appropriate setting.

CHARLES DARWIN.

If Harvey introduced a new era in medicine and Hunter in surgery, Charles Darwin gave the whole world of learning a new outlook. The recognition of the reality of evolution effected a revolution not simply in biology, but in every field of intellectual work. Although Darwin's work was inspired primarily by what we now call nature studies, it is clear that the foundation of the argument, without which he would not have been able to convert people to accept his views, was represented by the facts of comparative anatomy and embryology. He himself says in the "Origin of Species" that morphology is the soul of natural history.

Darwin's achievement gave a new orientation and a new meaning to morphology. What is not generally recognised by physiologists at the present time is the vast scope of evolution and the significance of processes that took many millions of years to effect. They do not seem to appreciate that only an altogether insignificant fraction of the great natural processes is susceptible of experimental inquiry. When they ask what use can be assigned, say, to the morphology of the lizard's chondrocranium they thereby show a failure to appreciate that the great story of evolution is based upon the linking-up of the facts of morphology and palæontology. No full understanding of the behaviour of man or any experimental animal can ever be attained without a knowledge of his or its origin and evolution.

THE CELL THEORY.

What Prof. E. B. Wilson calls a milestone of modern scientific progress—the cell-theory enunciated by Scheiden and Schwann in 1838–39—stands forth as one of the greatest achievements in biology, which marked the beginning of a new era in knowledge and its application in practice. Goodsir, Virchow, and their successors used this conception for the analysis of the structure of organisms, and in doing so opened far-reaching vistas of progress in every department of biology and medicine. In more recent times the evidence afforded by the behaviour of chromosomes afforded anatomical corroboration of the results of experimental breeding and compelled even the geneticists to admit that morphology had its uses.

THE PRESENT POSITION OF ANATOMY.

Even if anatomy had achieved nothing more than make vital and essential contributions to the great revolutions in thought effected by William Harvey, John Hunter, William Sharpey, Rudolf Virchow, and Charles Darwin, its place in the forefront of progress would be established. But its claims are much wider than that. Its influence was, in fact, universally felt in the advance of civilisation. It is not, however, the place of anatomy in history with which I am chiefly concerned to-day. It is rather its present position and future development that I want to discuss. In your museum the word physiology is, significantly enough, used to connote comparative anatomy. This unusual usage expresses an important truth. For no method more clearly reveals the functions of structures than the correlation of their varying size and structure in animals of differing capabilities.

In his comparative study of the heart, and in particular of the bulbus cordis, the present conservator of the museum has shown, perhaps more clearly than in any other of his numerous works, that the spirit of John Hunter is still alive here. For the use of comparative anatomy, in conjunction with the study of the functional meaning of the varying arrangements, to illuminate the normal morphology and pathological states of the heart would have delighted the founder of the museum. Sir Arthur Keith's greatest service to science, however, has been his persistence in keeping constantly before the anatomist the urgent need for the study of function as an essential part of the interpretation of structure. From its foundation the principle has been emphasised in your museum. The use of the term "physiological series" for the collection of comparative anatomical preparations is a happy illustration of the real spirit of Hunter's work.

Take, for example, the case of the cerebellum, which I discussed in the Arris and Gale lectures in this room six years ago. Some physiologists (for example, Prof. Magnus in his Croonian lecture to the Royal Society this year) are now proclaiming that their experiments do not reveal any functions for the cerebellum; but anyone who walks through the gallery of this museum, where the wonderful collection of vertebrate brains is exhibited, can see for himself that Nature's great experiments in modes of posture and locomotion have left their impress so clearly in the cerebellum that he who runs may read. So also in the morphology of the brain as a whole the varying sizes and histological structure of its parts express the habits and capabilities of animals and reveal the broad lines of their functions.

In his great treatise on the "Integrative Action of the Nervous System," which opened a new era in the interpretation of the brain's meaning, Sir Charles Sherrington calls the cerebrum "the ganglion of the distance-receptors," by which are initiated and guided long series of reactions of the animal as a whole. Unfortunately he did not avail himself of the facts of comparative anatomy to elucidate and reap the full harvest of his illuminating idea. Here, again, it requires no difficult technical procedure or abstruse knowledge to discover facts of fundamental importance which have escaped those who neglect to give due consideration to comparative anatomy. It is only necessary to look at a comparative collection of brains such as this museum contains to see at a glance that the most primitive type of cerebrum is not equally the ganglion of all the distance-receptors, but predominantly the one concerned with smell. The part of the brain that eventually became the organ of mind is primarily a receptive centre for olfactory impressions, and the instrument whereby such experience can influence behaviour. The whole arrangement of the brain is dominated by this fact, which is fully borne out by experiments on the dog-fish, such as those of Prof. Parker, of Harvard University.

Considerations of structure cannot be ignored with impunity by those who aim at understanding function. After all the aim of experiment is to interpret the working of an instrument, and the mode of construction of that instrument cannot be neglected. But it is not only morphology that is essential, but also considerations of phylogeny, the relative place in nature and affinities of the experimental animal, the appreciation of which is based upon morphology. In all investigations considerations of evolution are matters of fundamental importance and are especially significant in the case of the nervous system, which undergoes profound changes in the course of its history. In such researches as those now being carried on by Prof. Magnus and his collaborators, the difference of behaviour in various grades of animals are being forced upon their attention. But the full fruits of much patient work are being lost by

many physiologists from their neglect of the phylogenetic factor.

THE NEW OUTLOOK IN ANATOMY.

As knowledge advances in physiology, pharmacology, biochemistry, and clinical medicine and surgery a host of new problems arise for the solution of which anatomy provides in many cases the means of solution and in all cases the coping-stone of objective demonstration and becomes the last court of appeal for its validity—the translation of elusive modes of reaction into the concrete terms of structure.

Experimental physiology aims at explaining the behaviour of living organisms and tissues, and if it is successful its results must be expressed in terms of the constitutions of the organism and its parts. Morphology is not only the foundation of experimental research—the territory in which the work is done and the study of the physical properties of the material investigated—but it also affords the ultimate test of the significance and validity of the results attained. Hence both kinds of investigation are essential and complementary the one to the other. The morphologist and the physiologist should work in close coöperation, the one with the other, and the clinician has opportunities for applying their results and making fresh observations suggesting new problems for the morphologist to investigate. How fruitful this coöperation of workers in the three fields can be is shown by recent research in neurology, by such bridge-builders as the Dutch investigators, Magnus and Brouwer, who in different domains of neurology have revealed the importance of the combination of morphological, experimental, and clinical methods in dealing with complex problems.

One could multiply examples almost without limit of the obtrusive part taken by theories of bodily structure, in particular of the heart and brain, in the building up of systems of philosophy and incidentally in effecting great reforms in knowledge. But it can also be shown that a lack of anatomical knowledge at certain epochs in the history of civilisation was responsible for hampering progress. In 1674 Malebranche (Recherche de la verité) expressed his belief [1] in the existence of vasomotor nerves (Nerfs qui environnant les artères pour fermer, par leur contraction, le passage au sang qui montre vers le cerveau, et l'ouvrir par leur relâchement à celui qui se répond dans toutes les autres parties du corps), but he lived two centuries before men had sufficient knowledge of bodily structure to appreciate all that was involved in this precocious intuition of genius.

Because anatomy had not prepared the way, for instance, the understanding of the injuries that produce aphasia had to wait for three centuries. In the year 1558 Nicholas Massa published an account of a case of traumatic aphasia, which disappeared after operation. The patient received a blow from a halberd that perforated the base of the skull and penetrated the meninges and brain, into which a fragment of bone was driven. He makes the comment, which in the mouth of a surgeon has a very modern and familiar ring about it, that the physicians had not noticed the depressed bone. Massa assumed that the loss of voice might be due to the pressure on the brain of the piece of bone he had detected. Hence in the presence of the physicians and other onlookers he proceeded to remove it. To their intense astonishment the patient at once recovered his speech.[2]

It was not until the beginning of the nineteenth century that, as the result of anatomical observations, Joseph Gall was able finally to demolish the old theory of animal spirits, and to prepare the way for the admission of the realisation of cerebral localisation. In a work published in 1818 Gall recorded a case of traumatic aphasia such as Massa had seen in 1558—an officer who received a sword thrust just above the left eye and lost "the memory for words." But it took more than another half century before physiologists and clinicians were willing to admit the reality of localisation, and then only when the genius of Hughlings Jackson and Broca and the experiments of Fritsch and Hitzig, Ferrier and others, had given the observations an anatomical setting by assigning to definite areas of the cortex the control of certain movements. The history of these 50 years is told in full by Dr. Henry Head in his great treatise on Aphasia and Other Disorders of Speech (1926).

With reference to the question of cerebral localisation it will be common knowledge that the histological investigations of Dr. Bevan Lewis from 1869 onwards established the fact of anatomical localisation. Yet Lewis's important work was brushed aside because the precise results obtained by him seemed to come into conflict with those obtained by experimental investigations. The difference in structure between the pre- and post-central convolutions of the brain was completely over-ridden by the fact that Sir David Ferrier and others obtained responses to electrical stimulation from both convolutions. It is important to remember that when Sir Charles Sherrington in 1900, using a more exact method of investigation, was able to prove that the post-central convolution was not excitable, the method of histological localisation was restored to favour, and the work which Dr. Bevan Lewis had begun more than 30 years previously was taken up with renewed vigour, and yielded some of the most significant additions to our knowledge of cerebral structure.

THE SYMPATHETIC NERVOUS SYSTEM.

The new chapter in the history of medicine created by the work of Gaskell, Langley, and Anderson on the sympathetic system was based essentially on anatomical investigations. Even the experimental part of their researches had as its chief objective the mapping out of the structural arrangements of this system. At the present time the question of the practical and clinical applications of this knowledge is the subject of lively controversy. There are grave differences of opinion in respect of almost every aspect of these problems. But in the long run the issue will be settled by the facts of anatomy. When we know more of the structure of the nerves passing to muscles and their connexions in the central nervous system, the decisive evidence for the solution of these difficult problems will have been attained. In respect of this matter the morphological outlook comes into direct conflict with the attitude taken up by many of those who rely solely on experimental evidence. It is generally admitted that muscles have two more or less distinct functions to perform, contraction and maintenance of posture. The brilliant investigations of Sir Charles Sherrington have demonstrated beyond question that posture is automatically regulated by means of proprioceptive reflex arcs. It is also admitted that in invertebrates there are separate and distinct muscles for performing these two functions, even though the movements of the animal are slow and clumsy.

To the morphologist, in whose outlook ideas of evolution loom more largely than they do to the mere experimentalist, it seems in the highest degree improbable that vertebrate animals, in which muscular activity attains a much higher degree of rapidity, skill, and complexity than it does in most invertebrates, there should reveal no corresponding differentiation of muscles and nerves for carrying out these two functions. For 50 years it has been known that there is a duality of innervation. We know that there are differences in muscular fibres—the thick and the fine—the relative proportions of which are responsible for the obtrusive differences in colour between red and white muscles. It seems, therefore, if one applies the morphological argument in the

[1] Quoted from Jules Soury, Système Nerveux Central, 1899, T. 1, p. 407.

[2] This case of Marcus Goss is reported in Nic. Massae Epistol. Medicinal., II., 90–91. Venetiis 1558, and a similar case in Fr. Arcaeus, *De recta curandorum vulnerum ratione*, 62–27, Antverpiae, 1574. My attention was called to these surprising records by the reference to them in Jules Soury, Système Nerveux Central, 1899, T. 1.

highest degree probable that the greater efficiency of the vertebrate muscle may be due to the fact that the two kinds of muscle-fibre, instead of being separate as they are in invertebrates, are intimately blended to form composite muscles.

We know that in the case of the viscera there are two functionally distinct groups of nerve-fibres, and it seems again highly improbable that the voluntary muscles, which have automatic functions to perform like those of the involuntary muscles and in addition the highly complex reactions associated with willed movements, should be less well equipped for these more complicated functions than the simpler muscles. It remains for anatomical studies to provide the explanation of the conflicting evidence derived from experiments and surgical operations.

SOME PRACTICAL APPLICATIONS.

In spite of the widespread neglect of morbid anatomy the development of cytology and the recognition of its fundamental importance in the investigation of cancer is bringing an increasing number of pathologists back to morphological studies.

An interesting application of such knowledge is now being made in clinical surgery, in which observations in the cytology of cancer (such as were made years ago by Sir G. Lenthal Cheatle) are being used by Dr. McCarty in the Mayo Clinic to determine the prognosis in cases of carcinoma.

Some observations that my colleague, Dr. H. H. Woollard, has been making on the neuro-muscular lesions of so-called beri-beri induced experimentally by depriving rats of certain vitamins, suggest that in the last resort the evidence afforded by the structural changes in muscles and nerves cannot be neglected in any estimate of the effects of food deficiency. This impression is even more emphatically confirmed by the observations on bone-growth by another of my colleagues, Dr. H. A. Harris. He has been able to demonstrate by anatomical studies that any diminution of the growth processes of the body (such as normally occur during the week after birth and in certain phases of puberty, as well as in grave illness, or even deprivation of a diabetic patient of his dose of insulin), will cause an opaque line to make its appearance in X ray photographs of bones. This has been mistaken for, and used as, a diagnostic sign of healed rickets, and the work of many observers has been vitiated by erroneous interpretations of the effects of vitamins, &c., on bone growth. Such results indicate that morphology provides criteria by which the influence of the various vitamins on growth and metabolism will in the future be tested—as for some years Prof. Herbert M. Evans in California has been doing—by their potency.

The knowledge of the arrangements of the tracts in the spinal cord that has been acquired within recent years seemed at first to have little more than an academic interest, or at most a use in diagnosing lesions beyond the scope of treatment. But in 1911 Dr. Spiller suggested that the knowledge could be put to the humanitarian purpose of relieving the terrible sufferings of patients with inoperable cancer. In the *Archives of Surgery* three months ago, Dr. M. M. Peet has described the truly wonderful results obtained by cutting that part of the antero-lateral column of the spinal cord which conveys impulses provocative of pain. Thus the unfortunate victims of incurable disease can get relief from their suffering without the resort to drugs, and at the same time retain other forms of sensibility and so be unconscious of the loss.

During the last ten years thorough investigation of the effects of nerve injuries in soldiers and the correlation of evidence so obtained with the facts of anatomy has enabled Prof. Stopford to extend and clarify our knowledge of the arrangement of the sensory nerves, and has given the surgeon new and exact methods for the diagnosis and prognosis of nerve lesions. Only four years ago the pancreas used to be cited as an example of an organ which when diseased could give rise to such profound changes in the whole organism as we know in diabetes without revealing any structural indications of disease. But we now know that this is no longer the case. The morphological changes in the islands are clear enough once one knows where and what to look for in the way of morbid change.

The identification of the anatomical localisation of the lesions of encephalitis lethargica and morphological studies to determine the sites of injuries to the midbrain and hypothalamus that in experiments and clinical cases give rise to definite reactions of body and mind will eventually give us a new insight into the physical factors concerned with personality, but also the neural processes concerned with the manifestations of the common symptoms, such as raising of the body temperature, nausea, &c., in grave constitutional diseases with which every medical practitioner is daily concerned.

These instances chosen at random are enough to indicate that in the near future anatomy promises to become the stepping-stone to a new revelation of knowledge which will illuminate the whole field of human endeavour.

In this address I have endeavoured to suggest the vastness of the opportunities that now present themselves in anatomy and how vitally they affect the progress of surgery, not merely the mere craft of operating, but also the wider problems of diagnosis, prognosis, prevention, and treatment. This College has the power actively to promote progress in these lines, which I hope you will permit one who is beyond the pale of your membership to mention. By means of the primary examination for its Fellowship it can insist that the rising generation of British surgeons is inspired with the true spirit of understanding of the human body and is alert and open-eyed to appreciate the great vision that is about to be revealed. Instead of helping the persistence of mediæval conceptions of anatomy, it can encourage a kind of anatomy that is in organic touch with really vital problems.

The College has in its great Museum the most valuable instrument for promoting the study of anatomy on right lines. The growth of the collection started by John Hunter is one of the great scientific achievements of the last century, and under the direction of Sir Arthur Keith the opportunities for the comparative study of anatomy have been brought to a higher pitch of efficiency than ever. The College has it in its power to induce the candidates for its Fellowship to avail themselves of this wonderful instrument that is now too much neglected, and in doing so it will enhance the importance of the College itself and raise the standard of the science and practice of surgery.

LONDON CLINIC OF PSYCHO-ANALYSIS.—This clinic has recently been opened at 36, Gloucester-place, W. 1, for out-patient treatment by psycho-analysis. The clinic is intended to bring a method of treatment that is lengthy, and therefore expensive, within the reach of those who cannot afford the usual, or indeed any, fees. It will also afford an opportunity for the training, under supervision, of medical students and practitioners who desire to specialise in this branch of work. The staff consists of the following honorary physicians: Ernest Jones (hon. director), Douglas Bryan, E. M. Cole, M. D. Eder, E. Glover, M. B. Herford, W. Inman, Sylvia M. Payne, R. M. Riggall, W. H. B. Stoddart, and John Rickman (hon. secretary).

NORTH AND EAST RIDING MEDICAL BENEVOLENT SOCIETY.—The Medical Benevolent Society for the North and East Ridings of Yorkshire and the City of York recently held its eighteenth annual meeting at York. The financial statement showed that there was a satisfactory balance in hand, and the trustees were directed to make a further investment from the funds of the society. The objects of the society are to give assistance to its members or their families where it may be needed owing to death, illness, or other disability. It was felt that the work of the society was not sufficiently known amongst the profession, and steps are being taken to bring its claims before all practitioners in he district,

STUDIES IN BLOOD-SUGAR.

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THE introduction by MacLean and others of simple methods by which the amount of sugar in a small quantity of blood could be accurately and quickly estimated has completely altered medical work on diabetes and glycosuria.

The use of insulin in the treatment of diabetes has necessitated the application of blood-sugar estimations in the treatment of almost every case. This is necessary first, for the differentiation of cases of renal glycosuria, to determine the renal threshold for sugar, and second, in the course of insulin treatment to control the dose, more particularly when sugar has disappeared from the urine. Increased knowledge of any disease usually brings with it the possibility of earlier diagnosis, and this is particularly true in diabetes, where the term "potential diabetic" is already in current use. The method by which such a condition is found is to estimate the patient's capacity to deal with a known dose of glucose taken by mouth after 12 hours' starvation, the blood-sugar being estimated before and at frequent intervals afterwards.

The test usually adopted is as follows. The patient takes no food during the night. The blood-sugar is estimated the next morning and 50 g. glucose are given in 100 c.cm. water. Thereafter the blood-sugar is estimated every half hour until six specimens have been examined. The urine before and after the test is also examined for sugar. The results may then be expressed on a chart with percentage blood-sugar as ordinate and time intervals as abscissa.

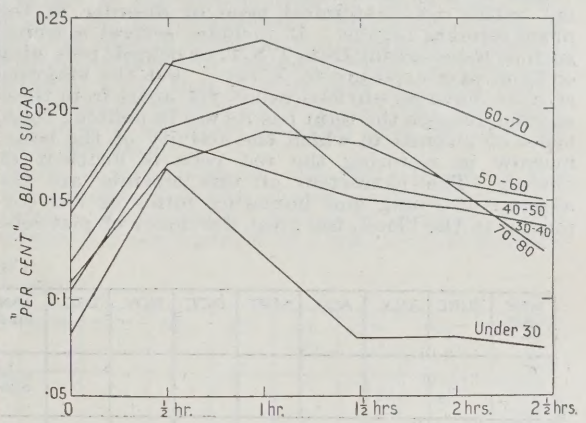
It is generally recognised now that the physiological response to 50 g. glucose during the early years of life—i.e., up to 30 years of age—will show a fasting blood-sugar level of 0·08 per cent., rising in half an hour to 0·17, but returning to the fasting level in one and a half hours, and that no sugar will appear in the urine. It is believed that the return to normal level is not due to cessation of absorption, but to the activity of the sugar storage mechanism, which appears to come into action at a concentration of 0·17 per cent. blood-sugar, which is also the renal threshold value for sugar. Authorities agree that some delay in this mechanism is usual as age advances, and it was with a view to obtaining some estimate of the amount of this physiological delay that this work was first undertaken at the suggestion of Prof. H. S. Raper.

Fifty normal individuals have been examined on the following plan: Ten cases in each decade, starting at 30 to 40, of mixed men and women were taken. Each case was starved overnight and the starving blood-sugar level estimated; 50 g. glucose in 100 c.cm. water were then given, and the blood-sugar estimated at the end of each half hour for two and a half hours, the urine being examined at the expiration of that time (see table). All the sugar estimations have been made by MacLean's method.

Age.	1	2	3	4	5	6
	Before.	½ hr.	1 hr.	1½ hrs.	2 hrs.	2½ hrs.
Under 30	0·080	0·170	0·125	0·080	0·080	0·080
30–40	0·105	0·184	0·174	0·153	0·150	0·140
40–50	0·120	0·192	0·207	0·165	0·155	0·152
50–60	0·146	0·225	0·218	0·195	0·166	0·155
60–70	0·145	0·225	0·238	0·245	0·205	0·185
70–80	0·115	0·175	0·190	0·185	0·165	0·130

Results.

The readings were averaged for each time-period and the results charted. The curves obtained are shown in the accompanying diagram which appears to demonstrate the following points: (1) That the starving blood-sugar level tends to rise from the normal 0·08 per cent. of youth to nearly 0·15 per cent. at 70 years of age. (2) That the actual increment of sugar-content of the blood, however, remains the same and is always less than 0·1 per cent. (3) That at the ages considered the highest point of sugar concentration is liable to be reached at the end of one hour, rather than at the end of half an hour as is usual in youth. (4) That there is an increasing delay in return to the starving level, which fails to occur in the two-and-a-half hour period of observation. (5) That in the decade 30 to 40 years of age urinary sugar in response to 50 g. glucose is not found, but in the decades above this glycosuria in response to this amount of sugar occurs in about 30 per cent. of tests, being rather higher in the decade 60 to 70 years of age, when it is nearly 40 per cent. (6) In the decade 70 to 80 the type of curve obtained differs greatly in that it does not rise so high, but takes considerably longer to return to starving level. No explanation of this is offered, but the patients were senile.



Conclusions.

From this it would appear that glucose tolerance curves should be interpreted not only from the point of view of the blood-sugar rise and the period occupied in returning to starvation level, but also with due regard to the age of the patient. The increased lag in the curve, apart from age considerations, might easily lead to an opinion of potential diabetes when in reality it is believed that the delay is the physiological result of age. This is particularly liable to be misleading in patients complaining of such troubles as pruritus and sciatica, which may or may not be diabetic in origin.

The smallness of the numbers examined must deprive these results of some of their value, but it is hoped that other workers may have similar figures to add and so increase the evidence which appears to have so important a clinical bearing. The possibility of administering glucose per rectum to cases of diabetic coma is so obvious when unconsciousness prevents voluntary swallowing that some evidence of adequate absorption becomes imperative. Blood-sugar curves taken hourly for four hours after the administration of 50 g. glucose with bicarbonate of soda in a 10-oz. enema have been made in ten cases; in two cases the observations were continued for six hours. In no case was any rise in the blood-sugar demonstrated.

It is therefore believed that glucose cannot be administered by this route with any reasonable hope of adequate absorption, and there is no evidence that glucose added to rectal salines is absorbed in sufficient quantity to raise the sugar-content of the blood at all.

THE ACTION OF ADRENALIN IN APLASTIC ANÆMIA.

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THE term aplastic anæmia is not that of a disease but rather an anatomical type of disorder of the blood-forming organs. It includes several anæmias such as those arising from T.N.T. or benzole poisoning or from over-exposure to X rays; but the majority of cases have no obvious cause, yet apart from these specific diseases the term has its use in defining those types of anæmia in which the activity of the bone-marrow in restoring the red cells is deficient or absent. The characters of this anæmia are the absence of young and immature forms of red corpuscles in the blood, the great deficiency of platelets, a leucopenia due to deficient polymorphonuclears, and a pale gelatinous condition of the red marrow seen post mortem. The following case belongs to this type.

J. S., a girl of 11, began, in the spring of 1923, to look paler than normal and to suffer from bruises in various parts of the body which appeared without obvious cause. Early in May of that year she was taken to see Dr. George F. Still who, after seeing a careful report on the blood by Dr. Carnegie Dickson, gave a very serious prognosis, and she was sent home to be under the care of Dr. King Edwards, of Watlington, to be treated by arsenic subcutaneously and by the mouth, and by transfusion if her condition failed to improve.

The condition of the blood at this time was as follows (Dr. Dickson): R.B.C., 1,990,000 per c.mm.; W.B.C., 4850 per c.mm.; Hb. (Gowers), 42 per cent.; colour-index, 1·06. Differential count (per cent.): Polymorphs, 12·3 (total, 596·5); lymphocytes, 86·6 (total, 4200); large mononuclears, 0·0; eosinophils, 1·0. There was considerable anisocytosis, with excess of large pale forms of red cell. Poikilocytosis was also present. There were no nucleated red cells or punctate basophilia and the platelets were very scanty. No malarial parasites were seen.

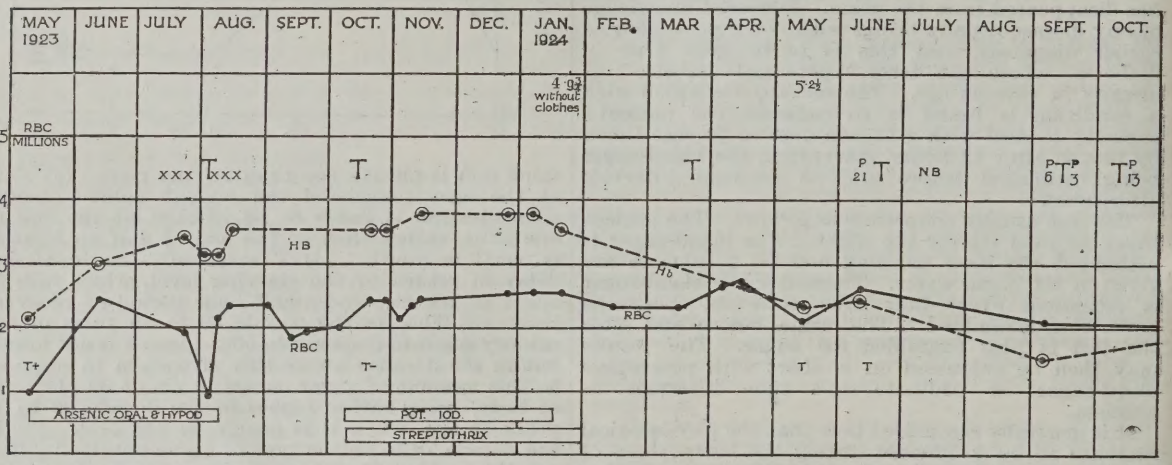
Soon after this I was asked to see her with a view to a transfusion if the necessity arose. She was at that time a pale, delicate-looking child with rather a dark skin, especially of the abdomen; there were several bruises about the body, and a slightly enlarged liver and spleen. She had a small daily rise of temperature. There was nothing of note in the family history; both the father and mother were healthy. The patient had been born in India, where she had lived till the age of 7, but except for an attack of fever, thought to be malarial, there had been no serious illness.

Investigations were undertaken to search for some ætiological factor. An extended search revealed no malarial parasites in the blood, the blood culture was negative, two guinea-pigs injected with fresh blood suffered no inconvenience and showed no trypanosomiasis or spirochætosis. There were no parasites in the fæces and the urine was normal. It was then determined to try certain lines of treatment and ascertain by her general condition and that of the blood whether any improvement occurred. Arsenic for two months gave no general improvement, though the red cell count rose slightly. Six exposures to X rays were then given over the spleen without effect, if anything with slight deterioration in the blood condition. During this period the first transfusion of half a pint of her mother's blood was given by the citrate method. Two months after, in October, 1923, another transfusion became necessary owing to deterioration in her general condition. Her blood condition was also probably much below that shown in the chart, which does not show the state before but after each transfusion. Previous to this for three weeks a vaccine of a sarcina which had appeared in one of the blood culture-tubes was used on the chance of its being a remotely possible ætiological factor. After that potassium iodide and a vaccine of a stock culture of a *Streptothrix actinomyces* was used, with some slight improvement. The rise of temperature ceased during the early part of this treatment. After three and a half months there was clear evidence that the general trend of the disease was downward. She was given without benefit four intravenous injections of antimony tartrate on the possibility of kala-azar being a factor, and she was given a short course, also without effect, of quinine.

A third transfusion was given in March, 1924. In May, 1924, she was slightly heavier than in the January previous; in this month the temperature again showed a slight daily rise. In the June following, when at the age of 12, her first menstrual period began and lasted 21 days. During this the fourth transfusion was given. From this time her progress was steadily downwards. There was a bad attack of nose-bleeding in July, 1924. In September, 1924, she had two menstrual periods of six and three days respectively, between which the fifth transfusion was given. Another transfusion was given in October, 1924, and there followed a menstrual period lasting 13 days. In November there were two menstrual periods of 13 and 10 days respectively. In December, 1924, the patient was extremely ill, blanched, with many bruises, occasional nose-bleedings; a menstrual period during that month lasted 24 days. She was given her seventh transfusion at the very end of the month and I left the patient not expecting to see her alive again. The transfusion produced little effect. Pituitrin on the second day was given in an attempt to control the uterine hæmorrhage. The condition of the patient was desperate, and as a pure experiment suggested by her pigmented skin she was given daily subcutaneous injections of adrenalin (Parke, Davis and Co., 1/1000 solution), beginning with 2 minims and increasing gradually to 5 minims.

From the time these injections began improvement set in; the menstrual periods after one of seven days in February, 1925, have become regular five-day periods every

CHART 1.



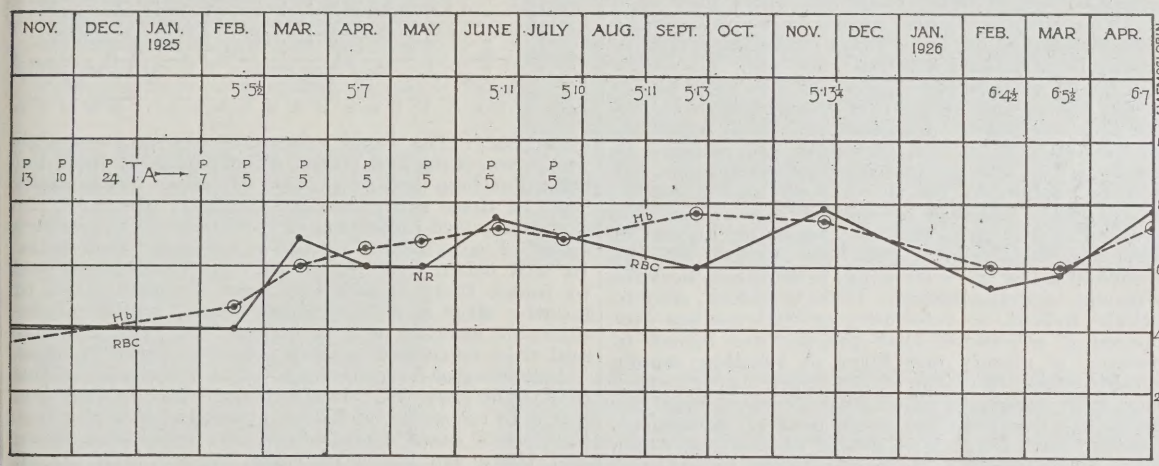
The continuous line represents hæmoglobin. The second to the twelfth of these estimations (June, 1923, to January, 1924) were made by the Talquist scale and are probably too high. The rest are made by Haldane's hæmoglobinometer.

The interrupted line represents red blood cells. T = transfusion; T = presence of temperature; P = menstruation, number of days; A = beginning of treatment by adrenalin; X = X ray treatment. The weight in stones and pounds is marked below the second horizontal line. N.R. = nucleated red cells seen in blood.

month. Her weight, which despite the severity of the illness had increased slightly, began to show a steady increasing rise, and in December, 1925, it had increased 8 lb. In the year beginning February, 1925, and ending February, 1926, she had put on a stone all but a pound in weight. General improvement in strength occurred with this and the patient gradually resumed normal habits with due care during the monthly losses. At the time of writing, July, 1926, she is a slightly made but otherwise normal girl of 14, a little paler than the average but able to run about and play with her fellows. The blood condition, however, has never returned to normal. The last count taken on July 15th, 1926, is as follows: R.B.C., 3,490,000; Hb., 72 per cent.; colour-index, 0·95; W.B.C., 4680. Differential count (per cent.): Polymorphs, 32·5 (total, 1521); small lymphocytes, 45·5 (total, 2120); endothelials, 16·5; eosinophils, 0·5; neutrophil myelocytes, 4·0; eosinophil myelocytes, 0·5; large lymphocytes, 0·5.[1]

The chart shows that since the adrenalin was used the red cells have varied between 3 and 4 million and the hæmoglobin between 60 and 80 per cent. The appearance of the red cells has altered; the size is more regular, polychromasia is present, and rarely an occasional nucleated red cell has been found, not seen previously.

CHART 1. (*continued*).



There has been a slight but significant change in the white cell count, as follows. The counts are the average of all records, 14 before and 11 after the administration was begun.

	Total leucocytes.	Polymorphs.	Lymphocytes.
Before adrenalin ..	2558	534	1439
After ,, ..	2894	971	1311
Normal average ..	5000	3250	1000

In all counts, therefore, there is evidence that the adrenalin has effected a change in the direction of, though not up to, the normal.

Remarks.

The patient whose story is given above has made an apparent recovery from a severe grade of aplastic anæmia of unknown ætiology, a type of anæmia almost invariably fatal. The beginning of the recovery coincides with the giving of daily injections of adrenalin, which has been continued, omitting one day in each week. It will be noticed that the blood count still shows some of the changes present at first—viz., diminution of leucocytes and of the total polymorphs—and both the red cells and the hæmoglobin are below normal; on this account it has not been thought desirable to omit the adrenalin for a period to ascertain whether the patient could maintain the improvement. There has been no deleterious effect of the adrenalin; the blood pressure has not been found above 120, there has been no hypertrophy of the heart, and no thickening of arteries. It is possible to argue that the recovery of the patient is due to natural causes such as occasionally happens, as in the case reported by J. Porter Parkinson.[2] In this case, however, the recovery was complete even to the blood count recovering its normal state. In the present case the recovery was evident within a week of giving adrenalin at a time when the patient's condition was extremely critical.

It is probable that the adrenalin acted as a direct stimulant to the bone-marrow of which some still remained to be stimulated. This action has been used with effect in rickets and osteomalacia.[3] [4] Certain experiments made by Berchtold [5] bear on this case. Berchtold found that in large dogs adrenalin causes many more young forms of both red and white cells to be seen in the blood emerging from the nutrient vein of the tibia.

There is some evidence also that absence of the normal secretion of the adrenal gland may produce anæmia. Occasionally Addison's disease of the suprarenal is accompanied by a mild grade of anæmia. Hutchison [6] records that in the suprarenal sarcoma of children there is a profound secondary anæmia.

I have not had an opportunity of trying adrenalin in another clear case of aplastic anæmia; in those cases of Addison's anæmia (pernicious anæmia) in which I have tried it there has been no beneficial effect.

[1] A further blood count on Sept. 17th, 1926, gave R.B.C., 4,410,000; Hb., 81 per cent.; W.B.C., spoiled. Differential count; polymorphs, 41 per cent.; small lymphocytes, 54 per cent.; endothelial cells, 5 per cent.

[2] Proc. Roy. Soc. Med., Children's Section, 1918–19.
[3] v. Bossi: Policlinico, 1907, abstract only seen.
[4] Tanturri: Gazzetta degli Ospedali e delle Cliniche, 1907, abstract only seen.
[5] Arch. f. Exper. Path. u. Pharmacol., Leipzig, 1925, cv., 63; abstr. in Endocrinology, 1925, ix., 517.
[6] Quart. Jour. Med., Oxford, 1907.

LIVERPOOL HOSPITAL AMALGAMATION.—The amalgamation of the Liverpool and Samaritan Hospitals for Women has now been carried a step further by the laying of the foundation-stone of the new joint building, which is to provide accommodation for 120 beds at a total estimated cost of £120,000. Of this sum £61,000 has already been raised. Along with the recently opened Maternity Hospital this new institution will make very complete provision for the care in Liverpool of diseases peculiar to women.

COLOURING MATTER IN MILK.—The Lancashire county analyst, in his annual report, states that of 4539 samples analysed during the year 1925, under the provisions of the Food and Drugs Acts, 487 were found to be unsatisfactory, four-fifths of them being milk samples. He points out that anatto which is largely used in colouring cheese, is quite harmless in itself, but the effect of its addition to milk is to impart a fictitious appearance of richness, and where the milk is really poor in fat, to conceal inferior quality. The use of any colouring matter in milk is now contrary to law, although many vendors appear to be unaware of the fact.

EPIDEMIC ENCEPHALITIS IN DOGS.

BY LESLIE P. PUGH, B.Sc., F.R.C.V.S.,
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THE epidemic with which this note deals, including more than 50 fatal cases, was one of what veterinary medicine has long known as the nervous form of distemper. Its chief interest lies in the fact that the occurrence of a number of quite definite "lethargic" cases leads to a closer comparison than has hitherto been made between the human and canine disorders. From this comparison it appears that both in symptomatology and in the character of the cerebral lesions the two diseases are almost identical. This similarity is so close that we are forced to conclude either that the two are the same disease but in different animals, or, alternatively, that the lethargic and encephalitic symptoms are not in themselves entitled to rank as a "disease"—i.e., a morbid process associated with a single virus, but are merely a particular form of reaction to which more than one virus may give rise. The former thesis seems to be difficult to support with any but superficial evidence, and may probably be dismissed without more ado. The latter has much to recommend it, especially in view of the fact that the canine form is everywhere acknowledged to be but one aspect of distemper. It is fortunate that the other forms of distemper are striking in character—e.g., the bronchi-septicus pneumonia, the symptoms referable to the throat and digestive tract. The occurrence of epidemics in which the prevailing type has included one or more of these, but which have yet been varied by the presence of a few cases showing, in addition, nervous symptoms, is well attested. It is, therefore, easy to conclude, indeed, no veterinary practitioner has ever supposed it otherwise, that the nervous aspect of distemper is merely one form of reaction among several to which the virus of distemper may give rise.

But with regard to the human form of epidemic encephalitis there is no such general agreement. It is true that there is a school of thought which regards it as bearing some such relation to influenza as does the canine form to the primary catarrhal type of distemper. But these views have not hitherto been supported by any such striking analogy as it is here sought to adduce, and have not gained wide acceptance. It is, however, noteworthy that very few have cared to deny in toto the validity of the evidence brought forward, and the arguments of those who have opposed this connexion are such as to leave the question still sub judice.

It is such considerations as the above which have suggested that the particular epidemic dealt with herein may have a medical and even an epidemiological rather than a purely veterinary interest. The line of argument which it seems to suggest, and which more expert pens will perhaps see fit to debate, is briefly as follows:—

(*a*) An epidemic of the nervous type of distemper has been observed in which persistent sleepiness, ocular palsies, hiccough, and other clonic spasms, together with changes in disposition, &c., have been evident.

(*b*) The lethargic cases have shown typical "cuff" lesions in the brain, minute hæmorrhages, major incidence on the basal ganglia, &c.

(*c*) Both symptoms and lesions are so exactly similar to those of the human disorder known as epidemic encephalitis that the identity of the two diseases, distemper and encephalitis, might well be considered.

(*d*) For various reasons such identity is improbable, and we are thus led to the conclusion that the encephalitis syndrome is not a disease per se—i.e., ætiologically regarded—but merely a type of reaction which may be evoked by more than one virus, for example, by those of distemper and of human encephalitis.

(*e*) In the case of distemper the same virus may in different epidemics give rise to other reactions—e.g., the pneumonic, the gastro-intestinal and cutaneous, &c.

(*f*) In the case of encephalitis lethargica of human beings no such forms have been described, except by those who associate it with influenza, which, like distemper, has a "standard" relatively mild catarrhal type, and at least one other well-marked type, the pneumonic.

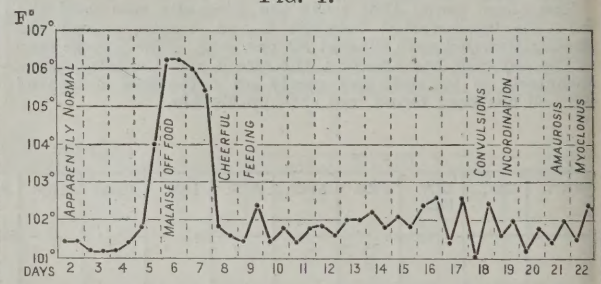
(*g*) Such argument as may properly be drawn from analogy is therefore in favour of those who regard epidemic encephalitis as a phase of influenza.

Details of an Epidemic of Distemper of Nervous Type.

The epidemic occurred at Sevenoaks, March to July, 1926.

Primary Stage.—This lasts from a few days up to three weeks, averaging ten days, before the onset of localised nerve changes. The usual symptoms were weakness, shivering, depression (Fig. 1), and high fever for two or three days, then a lower and intermittent temperature, conjunctivitis, salivation (mucinous),

FIG. 1.



naso-pharyngitis, rapid pulse, muscular and neuralgic pains, vomiting and thirst, constipation at first, but later diarrhœa in a proportion of cases. Occasionally none of these symptoms was actually observed, the first recognised indication of trouble being the sudden onset of convulsions or other nervous phenomena. In still other cases these nervous changes seemed to make their appearance only several weeks or months after a mild primary stage, whilst a considerable number of dogs showed the primary stage and then recovered without obvious nerve changes.

Secondary or Nervous Stage.—The description of this stage is no easy task. It is true that the clinician soon learns to recognise particular types, but it is also true that some cases change from one type to another, and there are many aberrant types which almost defy classification. Nevertheless, some form of classification has been found inevitable, and it has seemed better to base this rather on the mode of progress in each case than on particular symptoms.

(*a*) *Hæmorrhagic Type.*—A most acute fulminating type.

(*b*) *Transient Type.*—The characteristic of this type is the rapid and complete disappearance of symptoms within a few days. Thus a dog might one day show neuritic pains in one limb together with paresis, the next day another limb might be affected, and after that no symptoms of any sort persisted. In another case there might be for two or three days very definite myoclonus, and thereafter complete recovery. This class also includes certain cases with curious psychic symptoms, of which the tendency to run away like a rabid dog until overtaken by a convulsive attack was one of the most surprising. The psychic symptoms might equally be of a more negative type, the dog hiding under chairs or tables and shunning mankind, &c.

(*c*) *Relapsing Type.*—In general this type was either neuritic or myoclonic (Fig. 5) or both, the characteristic feature being the tendency to periodic recovery and relapse. Not infrequently it eventuated in a paralytic phase.

(*d*) *Paralytic Type.*—In this paralysis, commonly of the hind limbs, was an early symptom. This paralysis was flaccid, and considerable wasting was present.

(*e*) *Progressive Type.*—Here there are two subtypes, widely different in their symptoms, but alike in that they progressed fairly rapidly to a fatal termination. The first subtype is the

Lethargic type. The symptoms were usually lethargic at an early stage, as some of the case-histories show, but in Case 16 the disease first manifested itself by paralysis of the hind limbs, then affected the forelegs, and finally gave rise to typical lethargy and death. Case 10, a black mongrel terrier aged 2 years, was presented for examination. Temperature 102·5° F., rapid pulse, and injected conjunctival blood-vessels. A tentative diagnosis of distemper made. Two days later a slight pharyngeal cough developed. Nine days after the onset of malaise the dog appeared very drowsy. Although he appeared to spend most of his time standing up, yet he continually "nodded off" to sleep in

this position. At other times he would be found asleep leaning against the wall. If spoken to he would awaken, but doze off again within a few minutes. If forced to move he did so with slight incoördination of movement. Nystagmus present. He died in deep coma four days later. Histological examination of the brain in this case revealed lesions identical with those found in epidemic encephalitis. (See Figs. 2, 3, and 4.)

FIG. 2.

Perivascular cuff in basal ganglia region in case showing profound lethargy and coma. (× 200.)

FIG. 4.

Lethargic case. (× 100.)

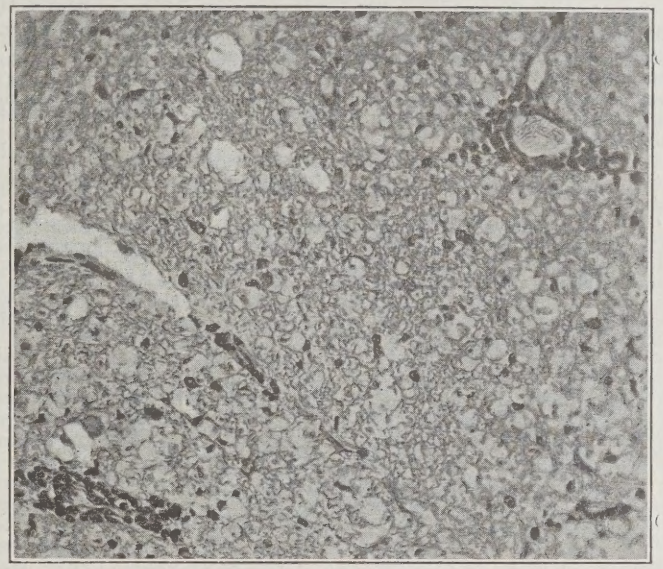
(2) The cerebellar type.—The cases in this group presented a curious form of head retraction. They had the appearance of continual effort to draw the back of the head more and more down on the spine. They commonly fell over backwards. They showed more often than other groups acute tenderness behind the ears, and such eye troubles as failure of accommodation, nystagmus, and definite strabismus were often seen. These dogs behaved as if blind or partially so. They were definitely ataxic.

Sequelæ.—Most acute cases, if not fatal, were destroyed owing to the change in temperament and physical changes encountered. After acute and progressive symptoms had long subsided some of the following might be observed :—

(1) Choreiform movements. Sometimes permanent, at other times intermittent, affecting any single muscle or group of muscles in any part of the body. These movements become more exaggerated when the animal is fatigued or excited.

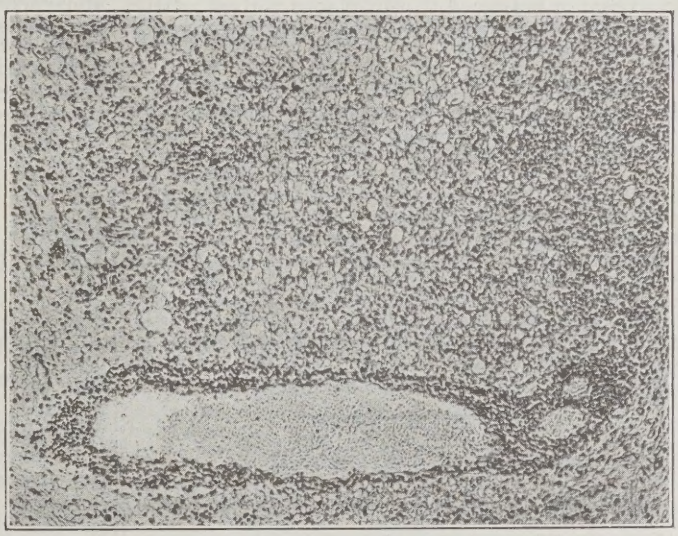
(*b*) Paralyses, especially of hind limbs. This type commonly follows the peripheral neuritis cases, and although there is a definite tendency to recover slowly over a period of many months, residual paralyses did occur in some cases.

FIG. 3.



Case 24.—Cranial lesions. Lethargic. (× 200.)

FIG. 5.



Cellular infiltration in basal ganglia region of case showing myoclonus. (× 100.)

Complications.—(1) Herpes affecting the lips, conjunctivæ and eyes. (2) Gastritis or gastric congestion by no means uncommon. In some cases actual ulceration of the gastric and duodenal mucosa has been observed.

Mortality in those showing local nervous changes probably not less than 50 per cent.

Prognosis.—Very difficult. Some of the most severe cases, if persevered with, would apparently recover completely, whilst others showing the mildest or most transient of prodromal symptoms would terminate fatally. The progress of the disease itself is so variable from day to day that one dare not give any great hope, and even after apparent recovery, the animals' owners have to be warned against the

possibility of nervous phenomena arising should the animal become over-fatigued or unduly upset, overfed, &c., during the long convalescent period.

Macroscopic Changes.—The naked-eye changes in the nervous system are slight. The "milkiness of arachnoid," described by Da Fano and Ingleby, would be a very apt description of what one observes when the cerebellum is exposed in some of the more acute forms. Minute hæmorrhagic foci can frequently be detected in the region of the basal ganglion after a median incision, giving a "mottled" appearance. Such hæmorrhages are seen but less frequently in the cortex but were not noted in the meninges, the chief focus of infection would seem to be in the grey matter, although occasionally lesions could be found in the white matter.

Microscopical Changes.—Hall, in describing the histological changes met with in epidemic encephalitis, states :—

"The virus shows 'its most arresting change' (Miller) in the reaction of the blood-vessels. These are both vascular and perivascular, and occur chiefly 'round veins of a certain diameter, above all, round precapillary veins' (Marinesco). The vein is 'surrounded by a sheath of varying thickness, consisting of deeply stained nuclei of a round appearance' (Marinesco). This perivascular infiltration or perivascular 'cuff' is a regular phenomenon. The infiltrate occupies chiefly the Virchow-Robin space, and is composed of mononuclear cells. . . . Whilst the fibres of the vessel wall are dissected by the cellular infiltrate and the perivascular lymph space distended by it, the intima in most cases remains intact. . . . Besides the perivascular cuffs or adventitial infiltration, the affected areas are characterised by the presence of small scattered masses, microscopical in size, each composed of more or less loosely packed collections of small round cells." (See also THE LANCET, Jan. 2nd, 1926, p. 29.)

This description is equally true of the encephalitic form of distemper. It may, however, be noted that the "cuff" changes were generally very well marked both in the cranial and cord structures, and that there was no sign of polynuclear cells placed perivascularly. It should also be noted that apparently pure cranial cases show cord lesions.

Bacteriology of Distemper and Influenza.

In conclusion, one may perhaps be permitted to comment on the bacteriology of the pneumonic forms of distemper and influenza. That occurring in distemper is usually due to the *B. bronchi-septicus*, but the view that distemper is due to a filter-passing virus is now so general (Distemper Commission findings) that the *B. bronchi-septicus* is regarded as a secondary invader. It seems (F. W. Andrewes, see Official Report on 1918 Epidemic) that Pfeiffer's bacillus has a somewhat similar position in relation to the causation of influenzal pneumonia, and it may be that a virus will presently be demonstrated which will clear the situation. The parallel between the two diseases would appear to be too close to be disregarded.

HALOGEN ERUPTIONS.

BY ARTHUR J. HALL, M.D., F.R.C.P. LOND.,
PROFESSOR OF MEDICINE, UNIVERSITY OF SHEFFIELD, AND SENIOR PHYSICIAN, SHEFFIELD ROYAL HOSPITAL.

IN THE LANCET of Oct. 16th (p. 803) Dr. H. C. Semon records an unusual case of iodide eruption, following a comparatively small dose of the drug, as a matter of fact, 10 grains altogether. His interesting account of the case, and the illustration which accompanies it, reminds me of a similar one which I saw nearly 30 years ago. As cases of this severity are so rare and so disturbing when they occur, I venture to quote a short account of it, which was published in 1906 [1] :—

In 1898 I was asked by a medical man to see a case with him of very severe anthracoid acne in a young woman, the subject of subacute nephritis. She had been progressing satisfactorily until May 8th, when she was given a 3-grain dose of iodide of potassium. This was repeated three times during the next 24 hours, so that she took altogether 12 grains of the drug. On May 10th a rash appeared on the face, as a papule on the right lower eyelid. This gradually enlarged and more similar papules appeared on other parts of the face. I saw her first on May 13th, when her condition was as follows. Under each eye there is a semicircular, papillomatous, tuberose swelling completely filling the lower lid pocket. These are extremely tender and painful, very vascular, and covered with a kind of crust. On removing a portion of crust there is profuse bleeding of what appear to be elongated papillæ. Similar tense rounded tuberous swellings are situated here and there on the nose and cheeks. On the right side of the tongue at its edge there is a pointed oval projection about the size of half an almond. It is extremely painful and causes the tongue to be protruded to the left. It is smooth and tense, and looks like a small tongue growing out of the large one. This occurrence of a lesion on the tongue, similar to those on the face, has, so far as I am aware, not been previously observed. In one case, recorded by Morrow, the tongue and fauces were extremely congested. On May 18th the patient's condition was very distressing, the repeated severe bleeding, whenever the spots were dressed, and the pain and discomfort of them were very great. On May 28th pericarditis developed and she died a few days later.

It will be noticed that in this case there was a definite involvement of the tongue, which added considerably to the pain and discomfort caused by the eruption. At the time I saw this case it seemed probable that the presence of seriously defective kidneys played some part in the occurrence of this reaction so out of proportion to the small amount of the drug taken—namely, 12 grains in all. For some time after this I felt some hesitation in giving iodide of potassium in cases suffering from nephritis. However, since then I have often seen it given in such cases by others, and have prescribed it myself without any such untoward results, and it seems clear that this peculiar effect of the drug is really an individual idiosyncrasy, whatever that may imply, and is independent of the powers of elimination. I am glad to see that this view is confirmed by Dr. Semon's case, in which it is noted that the urine was normal.

These cases are so rare that any investigation into the nature of the "idiosyncrasy" is impossible. Nor has any explanation been offered as to why the worst of the trouble is usually in a somewhat circumscribed area around the eyes. In the paper written in 1906 and referred to above, I called attention, on clinical grounds, to the possibility of light rays playing a part in developing and localising these rashes in exposed parts. At that time very little attention had been given to the whole question of the action of light on the skin. It is interesting to note that during the last few years with the development of our knowledge of X rays, violet rays, &c., increasing attention is being given to this important question, and the effects which light in various forms can produce, both locally and generally, when acting upon the skin are now definitely recognised.

In conclusion, there are two facts which are worth remembering in connexion with eruptions due to the halogens. They may follow very small doses of the drug administered over a very short period and they continue to increase in extent for a considerable time—in the case of bromides sometimes for several weeks—after the drug has been entirely omitted. For these reasons it is often difficult to persuade the doctor who has administered the drug on the one hand, or the patient and his friends on the other, that it is a case of cause and effect.

[1] Arthur J. Hall: Some Points in Connexion with the more Severe Skin Eruptions produced by the Bromides and Iodides, Edin. Med. Jour., 1906, p. 213.

PRESENTATION TO DR. G. E. SCHOLEFIELD.—Dr. George Edward Scholefield, M.B.E., Ormskirk, medical officer of the West Lancashire Rural Council, was on Oct. 22nd presented with a silver rose bowl from the members of the council on the occasion of his retirement, after 28 years' service with the council. He was also presented with a silver epergne from the officials and staff of the Aughton Isolation Hospital, of which he had been medical officer since its opening 25 years ago.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DISEASES OF CHILDREN.

THE provincial meeting of this Section, postponed from June, was held at the Children's Hospital, Birmingham, on Oct. 30th, Mr. PHILIP TURNER, the President, being in the chair.

EXHIBITION OF CASES.

Dr. L. G. PARSONS showed a series of cases with radiograms illustrating

Cœliac and Renal Rickets.

The cases of cœliac rickets showed the development of this condition and its cure by limitation of fat in the dietary, the application of ultra-violet light, and the giving of irradiated cholesterol. He pointed out that in a young child the subject of cœliac disease the bones were fragile and atrophic in appearance, the cortex thin, and there was a general osteoporosis, but the epiphyseal line was quite sharp. Later on, about the age of 7 to 10 years, when growth was more rapid and the child more active, in addition to this general atrophic appearance there were obvious rachitic changes at the epiphyseal line and fractures were liable to occur. In the severest type of the disease there was a marked osteoporosis and extreme degree of rickets at the metaphysis with many fractures. The cases also showed that healing of the severest type would occur with the treatment outlined.

The cases of renal rickets were divided into three groups :—

(*a*) The *atrophic* group, in which the picture resembled that seen in cœliac disease—e.g., an osteoporotic and atrophic bone, with a thin cortex, and rickets at the epiphyseal line. This type, if the child survived to the age of 16 or 17 years, was frequently found to heal, and the healing was probably due to the fact that the child had reached the end of the growing period.

(*b*) The *florid* type, which showed a picture similar to that seen in ordinary rickets, and which in the case exhibited showed complete healing.

(*c*) The *woolly* type. In this type the metaphysis showed a curiously woolly, eroded, or stippled appearance, quite unlike that of ordinary rickets. The bone itself also showed a general osteoporosis and the deformities present were largely due to bending of the bone.

Dr. Parsons said that two apparently contradictory results had emerged from a study of these cases—namely, that in the florid and atrophic types cure might occur, but in the woolly type the use of ultra-violet rays made the condition worse. In all types of renal rickets the blood phosphorus was high. The calcium varied from 7·5 mg. to 11 mg. per 100 c.cm. ; compared with the phosphorus it was, therefore, always relatively low, although the actual figure might be normal or even above normal. In the atrophic type cure at the age of 16 or 17 years was probably due to the period of growth being over. The probable mechanism of cure in the florid case shown was as follows. When the child came under observation first it was in an attack of uræmia, and as a result the phosphorus reached a very high figure. As the child improved the kidney was able to excrete phosphorus better and the calcium thereby became relatively higher and eventually, when cure had occurred, the calcium and phosphorus were almost in the same ratio as in the normal child. The picture presented by the woolly type was exactly that seen in the low calcium rickets produced experimentally in rats, and the histological picture, although not identical with that usually seen, undoubtedly indicated rickets. The woolly type was the most severe type of the condition and the reason why ultra-violet rays were contra-indicated in treatment, particularly of this type, was that the effect of ultra-violet irradiation was to increase the already high blood phosphorus, thereby making the already relatively low calcium lower still.

Dr. L. BALL showed a case of

Myelitis with Optic Neuritis.

The patient was a boy, who was admitted to hospital in June, 1923, being then 4 years of age. A febrile illness had commenced on May 16th of that year, accompanied by severe pains in the back and legs. This was followed by paralysis of the lower extremities, which developed gradually during a month from the onset of the illness, by which time complete flaccid paralysis of the lower extremities was present with anæsthesia and retention of urine. About six weeks after the onset bilateral optic neuritis developed, rapidly producing total blindness. The flaccid paralysis of the legs gradually passed into a spastic paralysis with contracture. The anæsthesia and the bladder paralysis recovered. The optic neuritis subsided into a post-neuritic atrophy, and to-day the discs showed atrophy of the so-called primary type. There was total blindness.

Dr. Ball also showed two cases of

Post-Encephalitic Respiratory Disturbances.

In the first case encephalitis developed during an attack of scarlet fever in 1924. In July, 1925, the child showed very marked attacks of respiratory disturbance, in which she went black in the face. Since then the attacks had slowly but steadily decreased in severity, duration, and frequency. She now had a definite Parkinsonian gait and attitude, but only a very occasional respiratory attack.

The second case was that of a female child who three years ago had an illness which commenced as an influenza cold, after which she became very restless, "like St. Vitus' dance," and was continuously picking things and chattering. This phase lasted three days, after which she became very drowsy and slept practically continuously for a fortnight. During this time a squint was noticed. She then became restless again, particularly during the night. The restlessness was now less marked, but for the last nine months she had panted. Occasionally she had turns of going black in the face, after which she slept. She was sleepless at night and had dribbled ever since the onset of the illness.

Dr. K. D. WILKINSON showed a case of a child, now aged 17, with

Congenital Heart-block.

She was first seen five years ago, when she exhibited a slow pulse, with no history of a previous illness. The heart was enlarged and there was a systolic murmur at the apex. The Wassermann reaction was negative. He had taken a number of electrocardiograph tracings which showed a complete heart-block. The pulse was usually about 32 ; to-day it was about 44 ; probably this was due to the fact that in these congenital cases excitement and exertion had some effect in increasing the ventricular rate. He believed the prognosis to be good.

Another case shown by Dr. Wilkinson was one of chronic nephritis, the particular interest of which was the recovery from a severe and protracted uræmia.

This girl had scarlet fever when 3 years old, and was first admitted to hospital in 1924 with heavy albuminuria and casts, but a normal blood-urea. Twelve months later she was readmitted with vomiting and oliguria and a blood-urea of 140 mg. per 100 c.cm. In September, 1926, she developed uræmia. The blood-urea was then 278 mg. per 100 c.cm. She remained in a uræmic state for over a fortnight, with a blood-urea consistently over 200 mg. per 100 c.cm., although the urinary output increased. Thereafter she made a slow recovery, interrupted only by a few minor remissions, until at the present time the blood-urea was only 53 per 100 c.cm., the blood pressure was normal, and the urinary output averaged 35 to 40 oz. in the 24 hours.

Dr. Wilkinson also demonstrated a case of Congenital Heart in a Child aged 9 years.

The child had been blue from birth, was breathless on exertion, had suffered from frequent attacks of bronchitis, and occasionally from epistaxis and hæmoptysis. There was slight cardiac enlargement to the left, but none to the right, and a systolic murmur at all areas. Extreme clubbing of the fingers and toes was present and the red cell count was over 9 millions.

Dr. Wilkinson said that these should be regarded as cases of a disease not so much of the heart as of the circulation. The prognosis depended on three things —clubbing of the fingers, cyanosis, and polycythæmia.

Mr. SEYMOUR BARLING showed a case of

Œsophageal Spasm

in a child aged 4 years.

She had had persistent daily vomiting, without nausea, for years. After giving her a barium meal the X ray

examination showed an œsophageal spasm 2 in. above the diaphragm, and the question arose as to what was the nature of the condition. The barium remained in the œsophagus two to three hours, and some was persistently present for ten days. During her stay in hospital she put on a little weight, but still continued to vomit, and she could only take semi-solids. Examination by the œsophagoscope showed that there was no ulceration of the œsophagus, but that the condition was one of spasm. A bougie passed easily, but the spasm nevertheless continued.

Mr. Barling thought there seemed to be some similarity in this condition to cardiospasm in adults. Although cardiospasm was rarely seen in children, he wondered if this case was not really an early stage of that condition, and if the œsophagus would become dilated as the child grew. At the present time he was trying treatment with Souttar's tube and would welcome any suggestions as to treatment by other methods.

D. J. G. EMANUEL showed the case of a child suffering from

Polycystic Disease of the Peritoneal Cavity

of unknown origin.

The patient was a girl aged 9, who was normal up to the age of 1 year, when her abdomen began to swell, and at 3 years of age she was admitted to hospital with an abdomen of 27 inches in circumference and with a diagnosis of ascites. The abdomen was tapped and 3½ pints of dark-coloured fluid was withdrawn. The child left the hospital with an abdominal girth of 25 in. From this time onwards the abdomen continued to increase in size until the girth reached 38½ in., but her general health was unimpaired. In July, 1926, the abdomen was opened in the middle line and a large cyst exposed. This cyst contained about six pints of olive-green fluid, with many cholesterin crystals in suspension. Similar cysts, varying in size from that of a large orange to cysts containing several pints of fluid were found to extend throughout the peritoneal cavity, from the under-surface of the diaphragm on both sides down into the pelvis. Many cysts were incised, but removal was not found to be possible.

No indication as to the origin of the cysts was obtained, said Dr. Emanuel, but the structure was not that of hydatid cysts. He thought, however, that it might be a multilocular ovarian cyst.

Dr. P. C. CLOAKE showed a case of

Hemiplegia Occurring During Diphtheria.

The patient was a girl aged 12, who was admitted to an isolation hospital in June, 1925, with diphtheria. After 14 days in hospital she had apparently recovered from the illness, when she was seized with a right-sided hemiplegia and asphasia, and became very ill. Two weeks later she developed severe attacks of vomiting and, later still, difficulty in swallowing, probably due to pharyngeal and palatal palsy. There was some recovery of aphasia and of the right leg, but as was usual in these cases the right hand was still very spastic.

In the opinion of Dr. Cloake the condition was not due to an encephalitis, but to embolic impact of the brain. The source of the embolus was probably a clot in the left ventricle.

Two Interesting Cases.

Dr. J. M. SMELLIE showed two cases.

The first was a girl aged 12, who was admitted to hospital in 1919 with enlarged liver, a large heart, and a history of œdema. She was admitted to hospital again recently. On examination the child showed marked stunting of growth, and in the abdomen were three or four large irregular masses, but no symptoms of any kind were complained of. There was no evidence of deficient fat absorption from the bowel, and kidney efficiency tests were normal. The blood showed a normal count, and radiological examination did not show any displacement or deformity of the stomach, or intestinal stasis. The Wassermann reaction was weakly positive.

Dr. Smellie thought the case was one of tuberculous peritonitis, but hydatid cysts had also been suggested as an explanation of the abdominal tumours.

The second case was that of a boy aged 12 years, who appeared normal at birth, but was very late in learning to walk owing to marked spasticity. For the last three years the patient had been unable to feed himself because of marked tremor of the arms. Several operations had been performed on the legs to enable him to stand and walk with the aid of splints. At the present time the boy showed marked general spasticity, was unable to walk or stand alone, and there were coarse tremors made worse by voluntary movement. Marked dysarthria and some incoördination of the movements of swallowing were present. The tendon reflexes were increased, there was primary optic atrophy, and no pupillary light reflex. The liver was not enlarged, and van den Bergh's test was normal. The Wassermann reaction was negative. The child was not mentally defective, but he was subject to spasmodic attacks of laughter.

Dr. Smellie said that he had only had this case under observation for a short time, and he wondered if the condition might not be lenticular degeneration. Many of the symptoms suggested that condition, but the child had a double optic atrophy, and Dr. Beatson Hird had examined the eye with a slit lamp and reported that there was no Kayser-Fleischer ring present.

Pathological and Biochemical Illustrations.

After the clinical cases had been discussed there was a pathological and biochemical demonstration. Specimens illustrating hepatic lesions in childhood were shown by Prof. HASWELL WILSON. Specimens showing results of caseation of mediastinal glands by Dr. SMELLIE. A specimen of actinomycosis of the liver by Dr. BALL, and Dr. W. J. HILLIER gave a demonstration of his methods for testing the fragility of the red blood corpuscles, and of estimating the coagulation-time of blood. In the biochemical laboratory Dr. E. M. HICKMANS showed methods of estimating the colloidal osmotic pressure of blood, the estimation of blood cholesterol, the manufacture of lactalbumin, and the method of irradiating cholesterol.

LONDON POST-GRADUATE HOSTEL.

AT the bi-weekly discussion on Oct. 28th Mr. F. N. DOUBLEDAY, the President, opened a symposium on the

Filled Tooth as a Source of Streptococcal Blood Infection.

Some people, he said, have scoffed at the idea that a dead tooth could have any direct relationship with general disease, while others, in the opposite camp, laboured under a wish to extract every tooth from the patient's mouth, whether dead or healthy. Dental surgeons saw many people who suffered from a mass infection, such as pyorrhœa, but that was not the particular subject chosen for discussion; it was the dead tooth as a source of general streptococcal infection. He asked that the debate be confined to the streptococcal variety of invasion. The discussion naturally fell under two main lines: First, the pathological part—i.e., the establishment of the fact that the infection was there; secondly, the paths through which the infection probably travelled to become manifest in remote parts of the body. Perhaps opinions would be expressed on the recent work done in America by Weston Price, and the views held by Rosenow on the election shown by certain organisms for particular parts of the body. Dr. Weston Price had been doing work on the granulomata which occurred at the apices of teeth. Those who cut such granulomata open were aware that they were frequently found to be solid masses of cells, and many knew that they contained large numbers of leucocytes, which helped to give them their solid character. Weston Price's suggestion was that many of these solid granulomata at the apices showed in the skiagram as rarefied areas, and he believed that they were not so much evidences of infection as manifestations of the reaction of the body to the tooth condition, that they were, really, evidences of defence. Mr. Doubleday proceeded to mention three illustrative cases of proved streptococcal infection from his own practice.

The first was that of a married woman, aged 35, who came for treatment seven years ago and showed a tendency towards synovitis; she had teno-synovitis in the tendons of the arms and wrists. There were three dead teeth and a good deal of gum infection. He tried to persuade her to part with her dead teeth, but she steadily refused to do so, and went away for six months. At the end of that time she returned, suffering from acute teno-synovitis, and again he tried to get her to have the dead teeth extracted and the

others too, as streptococci had been grown from her gum margin. Her own local dentist scoffed at any measure beyond extraction of the three dead teeth. After that was done the teno-synovitis cleared up, though there were still streptococci at the gum margins.

The second patient, also a woman, was aged 65, and she had myositis, and arthritis of the cervical vertebræ, leading to much stiffness and limitation of movement, especially on turning her head. She also had some dead teeth, from which streptococci were cultivated. After those teeth had been removed she got some recovery of the movements which had been sol imited, but was disappointed because she did not get complete freedom following the extractions.

The third case was that of an ex-officer, aged 45, who two years ago was suffering from sciatica of a very acute form. He had two dead teeth, one of which, after it had been extracted, yielded from its apex *Streptococcus longus* almost in pure culture. The socket did not heal very well after the removal, and whenever there was a collection of leucocytes, with some pus, in the socket he suffered an exacerbation of the sciatica, and it was necessary in order to relieve the acute pain to open up and drain the socket. There was thus proved to be a close association between the sciatica pain and the condition of the tooth socket; even light treatment and the use of vaccines had failed to relieve the pain in the absence of the local measures referred to.

The Dental Aspect.

Mr. E. SPRAWSON spoke of the various causes of teeth going dead after filling. He said that, ordinarily, the death of tooth pulp was a process attended by some pain, and occasionally by considerable pain; but, under certain circumstances, neither pain nor any other symptoms accompanied it. One cause of the death of tooth pulp was that certain filling material used was harmful to the pulp; some of the synthetic compounds might cause such death by their toxic products passing down the permeable tooth into the dentine. Before the dental surgeon put in any such filling he should line the cavity with an impermeable cement; then such toxic effect could not ensue. Certain drugs were occasionally used by dental surgeons for the purpose of lessening the sensitiveness of the dentine when they were preparing cavities. The chief of these were arsenic and paraform, and, more rarely, ethyl chloride. These might kill the pulp without pain being felt, and micro-organisms might have been left in the cavity at its preparation and might subsequently cause a more general infection. An important point was that though the filling used in a tooth might be sound and good, yet on some aspect of the tooth not easily seen, where it was adjacent to another tooth, a new site of caries, unsuspected, might have occurred, and result in infection and the death of the tooth. This death usually caused pain, but it must be remembered that occasionally it did not. Sometimes, notably in children, when excavating the cavity the surgeon might expose one or more cornua of the pulp, perhaps with the last stroke of the burr, and an attempt was often made to preserve tooth pulps by sterilising the cavity and covering over the exposed cornu with some non-irritant, slightly antiseptic dressing. In adults this frequently was not successful. Senile teeth (by which he did not mean the teeth of old people) were often found to have dead pulp, and often there was present some recession of the gum. Therefore, at the outset, such a tooth should not be saved; some infection might be left in the depths of the cavity at the time of its preparation for filling. The tooth pulp might be killed in operations on the maxillary antrum, especially when an opening was made through the canine fossa, with the consequent cutting off of the nerve and blood-supply. Also, trauma might cause the death of the pulp, whether or not filling had been done. When the dental surgeon had to deal with sensitive dentine he sometimes injected a local anæsthetic into the gum in the proximity so as to lessen the sensitiveness of the dentine, and usually some adrenalin was used at the same time, and thereby the pulp was rendered not only anæsthetic but analgesic. As soon as the effect of the anæsthetic had worn off, the patient could be depended upon to let the dentist know about the pain.

The Radiological Aspect.

Dr. A. C. JORDAN demonstrated on the screen a series of radiographs of the teeth and jaws, both healthy and in various stages of disease. He said that X ray films were essential to the diagnosis of infected roots, as neither doctor nor dentist could be sure of the diagnosis without them. In all civilised communities teeth decayed early, chiefly because of the unnatural condition of the foods eaten. If people were to return to eating fruits, nuts, grains, and greens, with fresh farm produce, the teeth as a whole would be immensely better in a single generation, especially if careful attention were given in the matter to the expectant mother. During the months of nursing and a year beyond, infants should be encouraged to work their jaw muscles by biting on bone and other hard substances, as this tended to allow more room for the teeth when they came, and to avoid overcrowding. The sucking of "dummies" should certainly be discouraged, as this contracted the jaws.

The Bacteriological Aspect.

Dr. R. G. CANTI said that normally the mouth was crowded with organisms of many kinds; a cubic centimetre of saliva contained 100 million cocci. Therefore it was easy to contaminate cultures when material was taken from the mouth for investigation. There were two important sites of sepsis: the pyorrhœa pocket, and the apex of the tooth, the latter being the more important. The mucous membrane of the mouth was continuous with the periodontal membrane, and when that membrane was the seat of disease any organism inhabiting the mouth could get down there and destroy it, forming a pocket which was the nidus of infection. Some of the mouth organisms lived there as saprophytes, but others produced toxins, which were very liable to be swallowed and do harm in the intestinal tract. Usually streptococci were not predominant among the mouth organisms; more frequent denizens were Gram-negative organisms, such as coliform or highly motile vibrios. Spirochætes also were present in large numbers, as well as amœbæ. He had never examined pus from a pyorrhœa patient without finding the latter. Sometimes an organism from outside was found in the pus of a pyorrhœa case, such an one being actinomyces. There were many difficulties connected with the bacteriological examination of the contents of an apical abscess. The tooth could be extracted and an attempt made to grow organisms from the root. But there were fallacies to beware of. As the tooth was being drawn from its socket the tendency to form a vacuum resulted in movable material, such as saliva, being drawn into the cavity and vitiating the examination. He deprecated the practice of putting a tooth into a bottle with its matter round it, for the result of 12 hours of shaking up in the post was that all the other material had got into the apex, and a dependable opinion could not be given. Much help could be afforded by sterilising the cavity; iodine should not be used for this, as it was likely to kill bacteria. Alcohol, or alcohol followed by ether, was preferable. The form of streptococcus usually found at the apex was *S. salivarius*, that at the root of an acute abscess a hæmolytic streptococcus.

Discussion.

Mr. A. P. BERTWISTLE gave a résumé of a case of severe constitutional disturbances which cleared up on removal of a tooth and drainage of an abscess.

It was that of a man, aged 29, who had an attack of follicular tonsillitis, and one evening, when it was clearing up, he had pains in the left ankle. On the following day the pain had ceased, but the ankle was swollen, and pitted on pressure being applied. He had "tightening" pains in the lower part of the right chest, and much constitutional disturbance, the temperature being 101·5° F. In six weeks the chest pains had disappeared, but the œdema increased and extended up the leg. A month later the tonsils were removed, and as the appendix became inflamed that was removed four months later. Four years after these occurrences he had erysipelatoid attacks, and in half an hour he had a feeling of malaise and the temperature was 101°, and for 24 hours he had copious vomiting. The inguinal

glands became painful, and the saphenous vein hot and painful, probably part of a lymphatic trouble. Walking was impossible owing to fixation of thigh and knee, but in a month this disability had disappeared. Three further attacks occurred, but the third was much less severe. In a still further attack the leg was tender and all movements of toes and ankle were very painful. Mr. McAdam Eccles saw the case and suggested that a dental focus was the source of the trouble, recommending that the teeth should be X rayed. An abscess at the root of the second molar tooth was subsequently found, and on an apparently perfect filling being removed, pus welled up. A strong antiseptic dressing was applied to the tooth, and following that the patient's condition was much improved. As there had been no pain in the tooth, it was a surprise when an abscess was discovered.

Mr. W. MCADAM ECCLES said surgeons came across many cases of the kind in which the source of infection was very difficult to find. The late Mr. Lockwood was one of the first to draw attention, in any London medical school, to the fact that the mouth contained a vast variety of bacteria, and even animal parasites, and that these might be the cause of many of the conditions which were found. In the definite condition which might be called pseudo-elephantiasis, in which the lower extremities were very much enlarged, particularly below the knee, with a peculiar sulcus about the ankle-joint, giving rise to what might be termed "tortoise-foot," there was often a definite source of infection in one or more teeth, especially teeth which had been stopped or crowned. And, in most of the instances, the removal of those infected teeth had produced very considerable improvement in what might be termed the secondary characters of such pseudo-elephantiasis—namely, the continued breaking and cracking of the hard, coarse skin.

Dr. P. H. MANSON-BAHR spoke on the subject of elephantiasis, the tropical disease, which might or might not be associated with chronic sepsis. He did some research work on this disease 15 years ago. It was a widespread disease, especially in some of the Pacific Islands; sometimes 20 per cent. of the inhabitants of an island were afflicted with the disorder. The filaria parasite was its first cause in natives, but it was not held that the filaria alone was responsible for the disease, as people could be infected with many filariæ for many years without having signs of lymphatic obstruction. In the production of the disease the filaria worm and the streptococcus worked hand-in-hand. In this country one saw instances of elephantiasis nostras, usually associated with recurrent attacks of lymphangitis, and there was always present an ascertainable cause of sepsis. In this the filaria worm was not operative, as it was not found in this country. In some cases of elephantiasis nostras one could find not only dental sepsis, but also some raw skin lesion or surface of the body from which toxins could be absorbed. Some of the cases started insidiously, without any exacerbation, that then it was very difficult to know what the cause of the infection was. An allied condition was congenital lymphœdema, of which he would like to know the cause. It was supposed to be a progressive stenosis of the main lymphatic trunks, and he did not think it could be attributed to any focal infection.

MANCHESTER MEDICAL SOCIETY.

A MEETING of this Society was held on Oct. 6th, when Dr. ALFRED A. MUMFORD delivered the presidential address on

Physique, Stamina, and Efficiency of School-boys.

He said that though we had vastly improved the medical assessment of health during the last 90 years, yet the methods of measuring physique advised by the medical witnesses during the Factory Commissions —the measuring rod, the scales, the tape, and the pulmometer of Thackrah, and the date of eruption of the permanent teeth introduced by Sir E. Saunders —still constituted the basis of our judgment of the physique of the school-boy. In all our calculations it was necessary to begin with the average boy and from him measure accelerated or retarded physique, the effect of instruction in the gymnasium, swimming-bath, games, and class-rooms. In the investigations described inquiries had been extended to the comparison of school physique with subsequent career at the local university. The Manchester Grammar School measurements had been taken under exactly the same conditions of clothing, &c., from 1881 to the present time. They showed that the average boy was steadily improving in height, weight, and chest girth, though the measurement of vital capacity and of endurance (by Flack's test) had been of too recent adoption for us to be able to tell whether there was any improvement in respiratory power. Measurements of boys admitted to the Classical VI. and Science VI. between 1890 and 1910, and of boys chosen for the gymnasium eights during the same period showed that, while there is little to distinguish them in height or weight from the average boy, yet in both cases there is a significant difference between them and the normal boy as regards chest girth. In order to find a common basis for comparing mental and physical progress, units of physical measurements must be taken on time increments—that is, in the progress made in six or 12 months. Tables of time-increments in height, weight, chest girth, vital capacity, and endurance based upon the records of the school had been drawn up and were used for constant reference. By means of these the relative development in the different categories could be compared. Observations were also made on the specific gravity of boys in the school swimming-bath during the summers of 1923–24. It was found that the largest factor in the variations was due to the degree of inflation and the size of the chest. When the means of the observations with inflated chest at each year of life were taken, it was found that they were always below that of water, while the means of the observations with deflated chests were always above that of water. The question of buoyancy as a standard of health was, therefore, considered. As it was impossible to measure the buoyancy of all the boys in the swimming-bath, an attempt was made to utilise the measurements taken in the gymnasium for finding the relation between weight and volume—that is, the specific gravity. The formula

$$\frac{\text{Weight in grammes} \times \text{K}}{\text{Height in centimetres} \times (\text{chest girth in centimetres})^2}$$

was adopted.

A lengthy series of inquiries showed that for the average boy "K" was in the immediate neighbourhood of 19·5. In the subsequent 2300 calculations of series of measurements, the "K" was left out and the formula $\frac{W}{H C^2}$ was used as a crude buoyancy index of health. If special cases, where the chest girth differs markedly from the mean circumference of the body—e.g., the cases of boys of exceptional shoulder development and the cases of boys of very full stomach are left out—the crude buoyancy index was a very useful method of testing the physical fitness of different boys. The means of the crude buoyancy index of the 2300 cases at each age were taken as the normal, and it was found that the high level scholar was of markedly greater buoyancy and the gymnasium champion of still greater buoyancy than the average boy of the school. A further series of measurements of shoulder girth was taken and this girth was calculated as a percentage of the trunk height in order to obtain an index of shoulder development.

A study of the development of the shoulder in relation to physique was of very great importance, since in Circular 1363 the Board of Education virtually scrapped the elastic horizontal ladder, the row of rings, parallel bars, and horizontal bar which had played so large a part in developing the physique and courage of English public school-boys, in favour of Swedish apparatus. Mathematical analysis of measurements taken at the Manchester Grammar School

showed a high correlation between the development of the shoulder as secured by English methods and the high range of breathing. Whether Swedish methods would prove as active and beneficial to English public school-boys remained to be proved.

Graphs illustrating the way in which the development of champion gymnasts, swimmers, winners in long-distance runs, sprinters, holders of school colours in lacrosse, football and cricket, and also graphs showing differences in physique between boys of accelerated and boys of retarded scholarship had been constructed. Finally, a group had been taken of 140 students who during the last ten years had been educated at the Manchester Grammar School where they had been submitted to periodic measurements and had subsequently passed on to the Manchester University. The group was divided into two sections: (1) about 45 in number who had passed through a five years' course at the medical school and had not failed at any examination, and (2) those who had suffered one or more failure. It was found that, though the mean height after 16 years of age in the former group had been slightly less than the mean of the latter group, yet when the relative gradings in height, weight, and chest girths were compared, the boys who had passed through the university without any failures had shown an ampler range of breathing or a larger chest girth in relation to their height than the group who had suffered failure.

INTERNATIONAL SOCIETY OF MEDICAL HYDROLOGY.

AMSTERDAM CONFERENCE ON CHRONIC RHEUMATISM.

By invitation of the Dutch Committee of the Society a conference on rheumatism was held at Amsterdam on Oct. 23rd, representatives of the Ministry of Health, the British Red Cross Society, the Society's British Committee on Rheumatism, the British Spas, and the Spa Federation being present. The morning was spent at the Institute for Physical Treatment (Keizersgracht 489) where the medical director, Dr. J. VAN BREEMEN, secretary of the Dutch Committee, demonstrated the methods of physical treatment as applied in rheumatic and circulatory disorders to insured patients of whom as many as 300 may be treated in one day. The conference took place at the Colonial Institute, about 900 persons being present, Dr. TREUB, Chairman of the Dutch Committee, presiding.

Prof. J. R. SLOTEMAKER DE BRUINE (Minister of Labour), who officially welcomed the guests, expressed a hope that Holland would prepare statistics of the incidence of rheumatism similar to those published by the British Ministry of Health. The Dutch Government, he said, had every desire to support this movement.

Dr. TREUB said that the neglect of the study of common rheumatic disorders and the absence of clear data was bad alike for the patient and for the community. In Holland there were large numbers of workers suffering from rheumatic invalidity. Dr. van Breemen was their medical consultant, and they hoped to establish a special hospital for rheumatism in Amsterdam at an early date. A national effort was needed to combat these diseases.

Dr. FORTESCUE FOX (London) recalled the annual summer migrations of Highland fisher folk to the spa and the obvious relief thus obtained by people who lived in a cold and damp country. He was convinced that this age-long popular usage was justified, for modern medical observation had only confirmed the universal experience of the value of baths and internal treatment by waters in chronic rheumatic affections. But these natural physical remedies, if they were to be used with any advantage in our present civilised life, must be given by practitioners of special training and experience. Recent reports from northern European countries had brought out the dependence of the rheumatic diseases upon physical influences. The Council of the International Society, which had more than 300 members, believed that investigation ought to go hand in hand with curative measures, as had been done in the disablement clinics established during the war. Committees set up by the Society in northern European countries had recommended that treatment for rheumatic industrial workers should be improved both in quantity and quality, and concurrent investigation and treatment, under skilled medical direction, was the watchword of their movement. The problem in England and Holland was similar, because natural baths did not exist in Holland and were insufficient in England to deal with the large numbers involved. In England it was proposed to develop the facilities at the spas, and to set up clinics in the towns for investigation and treatment. During the last half century physical treatment had developed more upon the continent than in England; the British delegates welcomed the opportunity of studying methods at the Amsterdam clinic, and were also visiting the Hospital for Rheumatism at Aachen, directed by Dr. Krebs. They were dealing with a group of disabling diseases which inflicted serious economic loss upon all the northern communities, and it was essential that they should join forces in a common effort.

Dr. ALISON GLOVER (British Ministry of Health) said that the importance of rheumatic disease was everywhere admitted, and had been clearly shown 16 years ago in the admirable statistics of the Leipzig Federation of Sickness Funds and more recently in Sweden by Dr. Kahlmeter. The report of the British Ministry of Health showed that nearly one-sixth of the total sick pay for industrial invalidity was paid on account of these so-called rheumatic diseases, and this great incidence might be accepted as proved, at least for northern Europe. Most people were agreed that, at all events in England, only a minority of these hosts of patients were able to secure those forms of treatment which were highly beneficial if not essential; only a minority were subjected to that thorough search for the focus of infection which was so often required, and only a very small minority, usually of the better class, received appropriate physical treatment. Sir George Newman, the Chief Medical Officer of the Ministry, had repeatedly urged the necessity for provision of further treatment, and had pointed out that even with present knowledge an immense amount could be done, and ought to be done, for patients with such diseases as rheumatoid arthritis. Institutions for such treatment, he had said, should not be regarded as a Utopian ideal, and might, indeed, represent an economy, in view of the large sums which were now being spent or lost yearly, whilst allowing these diseases to progress unchecked by the kind of treatment they required—treatment which often could not be provided by the practitioner alone, nor, indeed, by the ordinary hospital or infirmary.

More recently, continued Dr. Glover, the same authority had foreshadowed a scheme which would include three different types of institution, the first being the *Physical Treatment Clinic*. Such clinics would serve a threefold purpose; first, they would be clearing houses, directing patients to the form and place of treatment suited to their need; some would be sent for spa treatment, some for intensive study at an arthritis unit, whilst others would be greatly benefited by treatment at the clinic itself. Secondly, therefore, these clinics would be out-patient institutions, to supply those forms of physical treatment often necessary for the re-education of muscles and joints. Thirdly, they should be organised in close coöperation with the arthritis unit and with the spa hospital, and provide continued supervision, observation, and after-care, following institutional treatment. Such clinics would be also of great service in diseases and conditions other than rheumatic, such as fractures, deformities, and diseases of the nervous system. The second type of institution foreshadowed was the *Arthritis Unit*, which should be in closest coöperation with a large teaching school of medicine or university, enabling it to fulfil

the purposes of research and observation as well as teaching. It would also act as a place of preliminary treatment or preparation for spa treatment. Patients would be admitted at the earliest possible stage of their disease for thorough examination by modern methods. The focus of infection would, if possible, be found and removed; bacteriological and biochemical investigations would be completed, and a diagnosis made before the patient was passed on to another institution; orthopædic surgery would, if necessary, be used. Such a unit would furnish opportunity for team-work in both research and treatment. The third type of institution was the *Spa Hospital*, organised in closest coöperation both with the arthritis unit and with the physical treatment centre. The hospitals at Bath, Buxton, and Harrogate suffered at present from the fact that many of their 650 beds were occupied by advanced cases. A wise selection of cases would be invaluable to the efficiency of the spa hospital. The patients having been thoroughly examined and the preliminary treatment being completed at the arthritis unit, spa treatment would be much more beneficial and the duties of the spa physician simplified.

Dr. KREBS described the treatment of insured rheumatic patients at the Landesbad at Aachen,

Dr. VAN BREEMEN protested against the common opinion, even in medical circles, that the control of rheumatic diseases was impossible. Many facts had been published and many results put on record by well-known medical men, proving that successful treatment was possible, even with the present poor organisation. He believed that when the family doctor had received at the university medical education in the diagnosis and treatment of rheumatism the results would be much better. But more was required than the family doctor in contending against these diseases. A special hospital for rheumatism was needed with a laboratory for scientific study. It had been demonstrated, especially in America during the last 25 years, that hospitals for particular diseases were of great advantage to the patients and to science. Holland might be made an important centre for the study of the rheumatic diseases, but both energy and funds were needed for this purpose. Moreover, he said, every disease with a social significance must be fought at the beginning and not at the end.

On the following day the conference was resumed at Aachen, where Dr. Krebs and his assistants demonstrated the organisation of the Landesbad, erected by the Friendly Societies of the Rhine Provinces in 1912, for the use of their members suffering from rheumatic diseases. The cases, usually in an early stage of disease, are selected by a commission at Düsseldorf. There are 360 beds and a complete system of physical treatment.

Reports and Analytical Records.

PREPARED HONEY (EMPIRE PRODUCE).

(GARVIN BROS., LTD., 26, FINSBURY-SQUARE, E.C. 2.)

THIS prepared honey is stated to be a blend of honeys of the Empire, "to which has been added the necessary proportion of invert sugar (the natural sugar of ordinary honey) to secure a uniformly high quality and mellow flavour." It is, therefore, obvious that this "prepared honey" is an admixture of ordinary honey and invert sugar. When analysed the following results were obtained:—

Invert sugar	71·05 per cent.
Cane sugar	3·10 ,,
Water	20·30 ,,
Ash	0·14 ,,
Unestimated matter (wax, proteins, &c.)	5·41 ,,

This composition closely approximates that of ordinary genuine honey, but is rather sweeter to the palate. It may be regarded as a wholesome preparation, and the food value is comparable with that of pure honey.

Reviews and Notices of Books.

OBSTETRICS.

By JOHN S. FAIRBAIRN, B.Ch. Oxf., F.R.C.P. Lond., F.R.C.S. Eng., Obstetric Physician to St. Thomas's Hospital. London: Humphrey Milford, Oxford University Press. 1926. Pp. 221. 5*s*.

THE common purpose of the Oxford Medical Handbooks, to which series this volume belongs, is to deal shortly with the fundamental principles which underlie their subjects, and to illustrate these by their applications in general practice. The handbooks are not intended to be short text-books, but to give a general survey, on broad lines, of various branches of medical science and of their inter-relations with each other. Dr. Fairbairn has shown that a survey of so complex a subject as obstetrics can be compressed into some 200 small pages by a master-hand without any important aspect being ignored. No attempt is made to mention the rarer abnormalities and difficulties of obstetrics, so that plenty of space remains to deal thoroughly with essentials. The result is most pleasing. Instead of a dull cram-book we have here a delightful expression of the author's broad outlook on obstetrics in relation to public health and private life. It is unnecessary to add that the teaching is up to date; for example, the latest views of Treacher on the imbedding of the ovum are included. The chapter on the Place of Obstetrics in Medicine and the Public Health Service is admirable, and the whole book is pervaded by that common-sense view of the subject which so many text-books appear to lack.

In the preface the author modestly suggests that the book should be useful as a primer for students; we would add that all who take an active part in obstetrics could study it with advantage.

PUERPERAL SEPTICÆMIA.

By GEORGE GEDDES, M.D., C.M. Aberd. Bristol: John Wright and Sons, Ltd. 1926. Pp. 200. 12*s*. 6*d*.

IN June, 1924, the Royal Society of Medicine awarded the Nichols Prize on the best contribution towards the Discovery of the Causes and Prevention of Death in Childbirth from Septicæmia to Dr. George Geddes, of Heywood, who has now published the subject of his thesis in book form. The greater part of the monograph is devoted to the causes and prevention of puerperal septicæmia, symptoms and treatment being dealt with more briefly. The data obtained for this essay are based on the author's 25 years' experience of general practice in one of the industrial areas of Lancashire. Previously he had practised in Scotland, where in his experience the disease was almost non-existent, and it was this marked contrast of the two practices which led to the present investigation.

Dr. Geddes admits many factors as responsible for puerperal fever, and sets out to prove "that industrial accidents determine the puerperal fever rate in every district, because such accidents generally produce septic wounds. He assumes for his purpose that "accident" and "septic wound" are synonymous terms, forming a unit when considered in their relationship to puerperal fever, and holds that septic wounds resulting from accidents become sources of infection. Women in labour are infected, he believes, through the agency of medical practitioners generally, who cannot escape contamination in the daily routine of industrial practice. The author bases his thesis on an extensive mass of carefully prepared statistical tables which are difficult to assess accurately. The statistical portion of the paper was submitted to Mr. Caradoc Jones, lecturer of social statistics, Liverpool University, who reported that "the results indicate a small positive correlation between the puerperal fever rate and the accident rate, and

between the puerperal fever rate and the erysipelas rate, but, in view of the size of the probable errors, it is not certain that the results obtained are significant." Since the proof of the "industrial accident theory" must largely depend on the statistical findings, Mr. Jones's verdict is not very favourable to its adoption. There is no doubt that widespread sepsis must increase the liability to infection during parturition in those cases where interference is necessary. The author remarks "that the most fertile source of streptococci in puerperal cases is the hands of those who conduct the labour"; the obvious remedy is to reduce this interference to a minimum and this can only be accomplished by efficient antenatal supervision. Unfortunately, Dr. Geddes barely recognises this important adjunct to the art of obstetrics, and in one place states "that antenatal supervision as advocated by Sir George Newman will not affect 75 per cent. of the victims of puerperal sepsis." With this view we cannot agree, and would point out further that his own recommendations are very similar to these official edicts which he rather scorns. In his opinion the one solution of the problem lies in preventing those most in contact with septic wounds—i.e., general medical practitioners—from attending puerperal women. As Dr. Geddes recognises the impractibility of this suggestion, his only alternative is that all labours should be conducted under strictly aseptic conditions—i.e., in lying-in institutions. Apparently no provision is to be made for any adequate antenatal supervision. He lays no stress on seeing the patients early, and in some instances his advice appears a little fortuitous—viz., "one might inquire as to the presence of vaginal discharges" or "if considered necessary the urine should be examined."

Without wishing to detract from a laborious and elaborate contribution to the literature of one of the most elusive diseases which have confronted the medical profession, we find that Dr. Geddes has not brought forward any fresh solutions of difficult problems, and that his thesis remains unproven. If, however, by an interesting investigation carried out under difficult conditions he has succeeded in drawing attention to the appalling maternal mortality in industrial areas, and in securing adequate lying-in accommodation, his work will not have been in vain.

SIR FELIX SEMON.

The Autobiography of Sir Felix Semon, K.C.V.O., M.D., F.R.C.P., Physician Extraordinary to H.M. King Edward VII. Edited by HENRY C. SEMON, M.A., M.D. Oxon., and THOMAS A. MCINTYRE. London: Jarrolds, Ltd. 1926. Pp. 349. 21*s*.

THIS is the interesting autobiography of an interesting man. Sir Felix Semon was not only a great laryngologist and one who raised the position of his specialty in this country to new heights, but he was also a skilled linguist and an accomplished musician, although, sad to say, he confesses that he never succeeded in taking to his heart "those old heroes Bach and Handel." He was a good shot, a keen fisherman, and capital company in all circles, so that his life was a full one, both in his public and private capacities, and its record will be welcome to many.

Sir Felix Semon was born in Danzig in 1849, but his family moved to Berlin in 1852. Here in 1856 he records how his father allowed him to sit up late and how he saw two sights which are among the most memorable recollections of his life—namely, Donati's comet, in 1856, and the great Alexander von Humboldt, who was sitting on a chair in the street looking at the comet through a telescope, and who died in 1859 in his ninetieth year. He received his early education at the Friedrich's Gymnasium in Berlin, which he left when aged 18, entering Heidelberg University in 1868 to study medicine, but a severe fracture of the leg sustained during his first long vacation compelled him to return home, and eventually he matriculated at Berlin. In 1870 his studies were interrupted by the Franco-German War, in which he served as a trooper in a Uhlan regiment, but the collapse of France was so speedy that he was able to return to his studies promptly, and he passed the final examinations in 1874. Then began a year of post-graduate study in Vienna, Paris, and finally London, where he arrived in 1875, and in 1876, after much family opposition, determined to settle as a laryngologist. Undoubtedly he had obtained, even in that stage of his career, an unusually good clinical insight, but he must have owed much to his personal qualities, for from start to finish he never looked back, and his long and arduous struggles to obtain recognition for laryngology as a special branch of surgery met with well-earned success.

Outside of his profession he lived in a delightful millieu of musicians, painters, actors, and authors, while he was recognised throughout by his colleagues as a representative man of science. He became President of the Laryngological Society of London, was elected physician for diseases of the throat at St. Thomas's Hospital, and was appointed Physician Extraordinary to King Edward VII., with whom he was on terms of personal friendship No wonder that his autobiography should be full of good stories in the course of a vivid account of a long life of varied activities. A long chapter is devoted to an account of the sad and somewhat sordid tragedy of the last illness and death of the Emperor Frederick, and will recall to senior readers the acrimonious quarrels that broke out in this country and in Germany around the professional behaviour and clinical performances of the closing scenes. Another most interesting chapter is the one dealing with the position of Semon himself and his compatriots in England during the Great War, when the esteem which Semon enjoyed in this country was well shown by the spontaneous resentment of his scientific colleagues at the action of the German laryngologists in removing his name from the *Internazionales Centralblatt für Laryngologie, Rhinologie, &c.*, of which he was the actual founder. This esteem had been shown publicly five years earlier, when in 1909 he retired from active practice. A banquet in his honour was then held and a testimonial subscribed, when the money was at his own request applied to the endowment of a lectureship at the University of London known as the Semon Lectureship for Laryngology. He died from angina on March 1st, 1921.

Dr. H. C. Semon has done his editing well.

BACTERIOLOGY.

A Manual of Bacteriology, Clinical and Applied. Eighth edition. By R. TANNER HEWLETT, M.D., F.R.C.P., D.P.H. Lond., Emeritus Professor of Bacteriology in the University of London; formerly Professor of Bacteriology and head of the Department of Public Health, King's College. London: J. and A. Churchill. 1926. Pp. 645. 18*s*.

THE fact that a book has been before the public for 28 years and has reached its eighth edition is more potent evidence of its success and popularity than any praise bestowed by a reviewer can be. In the life of a much-revised text-book a period comes when it might be well if the author could discard his old manuscripts and re-write the whole out of his mature experience and without reference to literature. Hewlett's Bacteriology now bears evidence of repeated additions; just as an old building sometimes becomes so hedged about by the subsequent improvements, alterations and additions required by changing times and new generations, that the main lines of the original structure are almost lost. In some ways the book "dates" in spite of its constant revisions, a type of Cambridge rocking microtome, for example, being figured whose manufacture ceased some 15 years ago. Prof. Hewlett has, however, been at great pains to keep up to date and has omitted no contribution to bacteriology of importance within the period covered by the book's existence. At the same time any personal gospel is rather submerged in

the effort to include in all-embracing fashion the results and views of a host of workers, and the student will have some difficulty in deciding between what is accepted teaching and what is much more speculative. This does not lessen its value as a reference for those whom experience has brought critical ability, and to them the book will prove extremely useful as one of the most comprehensive books on bacteriology in the English language.

THE HUMAN CEREBRO-SPINAL FLUID.

Vol. IV. of the publications of the Association for Research in Nervous and Mental Disease, New York. New York: Paul B. Hoeber, Inc. 1926. With 77 illustrations and 58 tables. Pp. 568. $10.

FROM knowledge of previous publications of the Association for Research in Nervous and Mental Disease, reviewed from time to time in the columns of THE LANCET, we expected much of this, their latest contribution, and are not disappointed. There have been a number of books in recent years which have dealt with various aspects of the study of the cerebro-spinal fluid in more or less comprehensive fashion; this volume contains perhaps the best survey of them all. The Editorial Committee claim for it the most up-to-date information, the embodiment of material hitherto difficult of access, and the best current interpretation of both the physiological and pathological sides of the subject. The clinical contributions are based on over 5000 recorded examinations of fluid obtained from every conceivable pathological state.

Authoritative presentments of a surprisingly large number of topics, ranging from the fluid's normal biological, chemical, and physical properties to the diagnostic replacement of the fluid by various agents, crowd the pages; a specially interesting section is concerned with reactions of the fluid in diseases outside the nervous system proper. As may be expected, differences of view and opinion in respect of controversial matters are acknowledged rather than harmonised; the incompleteness of present knowledge as regards the embryogenesis of the fluid and its relation to the vascular system is admitted, as also, indeed, in respect of not a few problems that are here handled with conspicuous scientific caution. The publication forms a standard reference volume and will bear comparison with any of its predecessors in the same field of research.

NERVOUS AND MENTAL DISORDERS.

From Birth through Adolescence. By B. SACHS, M.D., Consulting Neurologist, Mount Sinai and Montefiore Hospitals, New York; and LOUIS HAUSMAN, M.D., Assistant in Neurology, Mount Sinai Hospital. New York: Paul B. Hoeber, Inc. 1926. With 110 illustrations. Pp. 861. $10.

FOUNDED to some extent on Dr. Sachs's well-known treatise on the nervous affections of children, long since out of print, this volume contains an excellent modern account of the subject, well balanced and proportioned in its comprehensiveness. A long section on organic nervous disease is followed by others dealing respectively with functional and toxic diseases, endocrine disorders, vasomotor and trophoneuroses, and mental conditions. To the commoner organic ailments sufficient space is allotted, but rarities are not forgotten; among these are Schilder's encephalitis, Pelizaeus-Merzbacher's disease, and amyotonia congenita. The interest of the senior author in congenital affections is illustrated by the full descriptions of the conditions associated with defective development. From the same pen, also, comes one of the best chapters in the book—viz., that devoted to the normal child and normal youth. In this will be found a wise, thoughtful, and practical examination of the stages and experiences of childhood, of the nursery and the pre-school period, the school age, puberty, and adolescence; and it comprises a sane and fair criticism of the ills attendant on irresponsible application of psycho-analytic methods to youthful minds.

We have formed a high opinion of this compendium of nervous and mental disease as the clinician meets with it in youthful subjects; it embodies rich experience with a wide knowledge of current literature, and should at once take its place in the practitioner's library.

BOOKS ON CHEMISTRY.

An Introduction to Surface Chemistry. By ERIC KEIGHTLEY RIDEAL, Humphrey Owen Jones Lecturer in Physical Chemistry, Cambridge University. Cambridge: At the University Press. 1926. Pp. 336. 18*s.*

THE recognition that most of the phenomena associated with the colloidal state are the outcome of the enormous surface development of matter in this state has directed the attention of physical chemists to a closer study of the kinetics and structure of surfaces. This volume presents an excellent summary of our knowledge of this extensive subject, beginning with an account of surface tensions of liquids and solutions. Successive chapters deal with the characteristics of the various types of solid, liquid, and gaseous interfaces, the important subjects of molecular orientation and the theory of membrane equilibria being well described. The two last chapters are devoted respectively to conditions of stability in suspensions and emulsions, and to gels and hydrated colloids; an interesting account of the various theories concerning the structure of gels and the conditions affecting the swelling of gelatin is included. Throughout the book the subject is treated from a mathematical point of view, and those who are not well versed in mathematics are likely to find it somewhat difficult reading. But a grasp of mathematical principles being almost essential to the understanding of modern physical chemistry it serves no good purpose to gloss over this fact even in a volume designed as an introduction to its study. Those who make the effort to brush up their mathematics will be well rewarded.

A Text-book of Organic Chemistry, Historical, Structural, and Economic. By JOHN READ, M.A., Ph.D., B.Sc., Professor of Chemistry in the University of St. Andrews. London: G. Bell and Sons, Ltd. 1926. Pp. 680. 12*s.* 6*d.*

Prof. Read holds the view that by the time the student is ripe for the study of organic chemistry, having mastered the fundamental principles of inorganic and physical chemistry, he should be interested in the historical development of the subject. The author has therefore taken the unusual step of introducing into a text-book of organic chemistry a résumé of the development of chemistry from the earliest times—600 B.C. up to the formulation of the theory of molecular configuration by van't Hoff and Le Bel in 1874. Whether this is the right place for such an account is a matter of opinion, but the author has evidently taken pleasure in writing it, and this is perhaps the chief reason why it was included. The remainder of the book is divided into three parts, devoted to molecular diagnosis, aliphatic and cyclic compounds respectively. The book is written in a manner calculated to arouse in the student a living interest in the subject, since emphasis is laid on the technical and economic aspects as well as the purely academic. To achieve this object the author states that many details usually included in a preliminary account have been omitted. It is doubtful whether, in attempting to make the subject attractive, the author has not offered the beginner too varied a fare. There is much to be said for teaching the young student of organic chemistry not too much, but that right well; it is in his more advanced studies that he will appreciate the relaxation offered by a book of this type.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 6, 1926.

CERTIFICATION AND INSURANCE PRACTICE.

CERTIFICATION is the most criticised of the many duties required of the insurance practitioner. The medical profession contends that the certification rules are unnecessarily onerous, and such an analysis of them as was furnished in our columns recently by Mr. SHOETEN SACK, while going far to simplify the difficulties, must none the less have left the impression that the rules are complicated. The Insurance Acts Committee at a public inquiry have described them as oppressive and menacing, and this expression of opinion was significant because in no other respect has a complaint been made in categorical terms that the duties of the panel are unnecessarily burdensome—arduous as they are, they have been accepted in other directions as unavoidable responsibilities following on the contract. But the medical profession is not the only complaining party in respect of certification, for the approved societies on their side allege that their funds suffer serious loss through loose certification, and panel patients are also embarrassed when these societies demand certificates which the doctors hold that it would be irregular to give in the exact form specified. The position as it affects all the parties should be remembered. To the Annual Conference of Representatives of Local Medical and Panel Committees Sir WALTER KINNEAR said last week that the matter was in the hands of the medical profession, whom he would ask seriously to consider what steps they proposed to take to raise the whole standard of certification; but it is only because the doctor's signature is needed to start what may be an abuse that the doctor can be considered as the only agent in bringing the abuse about. The doctor is not responsible for the whole position. After giving confidential figures showing the increased amount of money disbursed in respect of sickness benefit since the onset of the coal stoppage, Sir WALTER KINNEAR admitted that the Circular issued by the Minister of Health last July, in which the insurance practitioners were asked to exercise the greatest care in granting certificates, had had good effect, in spite of which, however, he said, the increase of the claims continued, being so large now in certain parts of the country that it threatened to place the provision of a specialist service in jeopardy. To that grave position the methods of certification have been undoubtedly contributory, but we must look at the circumstances which have determined those methods.

The amount of money available in any particular year for health service under the National Insurance scheme is a fixed quantity out of which sick pay, medical benefit, and additional benefits have to be met. It is evident that one of these payments can only be increased at the expense of the others, and sick pay, where the amount of sickness or the standard of invalidable sickness has altered appreciably, may easily swallow up the resources. The Controller of the Insurance Department of the Ministry of Health, in which capacity Sir WALTER KINNEAR has spoken, put it to practitioners that, however creditable it might be to their hearts, they would be wrong to regard the Insurance Act as a form of relief, and it would not have been possible to convey the counsel in fairer words. It is evident from information coming in from all sides, as the effect of the industrial position becomes more widely felt, that persons are receiving sick pay who are not entitled to it, and in this way the proper development of the medical service under the Insurance Acts is impeded, because insured persons are being deprived of the chance to secure additional benefits to which they are entitled. A full specialist service when established will cost from 7 to 8 millions sterling in a quinquennial period—that is about £1,500,000 per annum—and the additional benefit schemes already approved under estimate will themselves absorb at once a large proportion of all the distributable surplus. The actual figures given by Sir WALTER KINNEAR show for 13,000,000 insured persons only about 8*s.* per person available for additional benefit each year, and it appears that if the expenditure on sickness benefit is maintained at its present rate it will be impossible to provide the additional benefits contemplated by the Bill now in preparation. One week's additional sickness benefit paid to each person on the sick roll in one year would imply that the additional benefits scheme, which 96 per cent. of the approved societies believed themselves to be in a position to give, will have to be withdrawn; and the specialist service, which all look to as the logical development of an insurance scheme for the health of the people, will not materialise. In face of the seriousness of the facts the Conference carried unanimously a resolution asking the Insurance Acts Committee to consider what practical steps can be taken, while pledging their influence to secure strict adherence to the principles governing certification for the purposes of the Insurance Acts.

The position is clear to every practitioner conscientiously anxious to see a proper development of medical benefit, but it is a terribly difficult course which the medical officer is asked to steer, especially in districts where there is no unemployment pay or where Poor-law relief is very stringently administered. It may be that practitioners are yielding too readily to importunities of insured persons, and where this has occurred the societies have a legitimate cause of complaint, and lax certification may be the root of the evil. But there are circumstances over which practitioners have no control. First there is the actual sickness incidence which may be accidentally or capriciously large; but secondly the social and economic condition of the workers must be reflected in the necessity for medical treatment. Factors in health maintenance due to economic stress cannot be recorded in health statistics, but their existence is known only too well to practitioners and social workers. There may have been no serious epidemics during the particular period at which the ominous rise in the disbursement for sick pay has taken place, but neither the absence of epidemics nor the presence of good weather can prevent the devitalising effects of poverty and hardship. Many practitioners found the demands on their services were greater in the June quarter than in the first quarter of this year, and visiting-lists and surgery day-books

would supply the confirming figures. Further, the figures for the drug bills incurred in the treatment of insured persons would probably bear out the assertion that the amount of treatment given to insured persons, as well as the number of certificates, was in excess of the first quarter of the year. The economic condition of the people has, then, a marked if subtle effect upon the demands of the insured persons. Some of these who keep at work so long as there is work to do are of such poor physique that they fall below a reasonable standard of health when they are unemployed. These men and women can always be considered as suitable cases for certificates when they are out of work. Even the most robust worker after a certain period of unemployment deteriorates rapidly, unless he can find some congenial form of activity. It is only to be expected, therefore, that such an industrial crisis as the coal stoppage will throw a considerable number of the workers on to the sick funds. The industrial dispute has had a demoralising effect on a certain class of workers who have come to regard all forms of assistance—Poor-law relief, strike pay, and insurance benefits—in the same category. It is consoling to find that the approved societies are beginning to realise the effect of the regulation which allows of the immediate transfer of an insured person from the list of one practitioner to that of a neighbour. It was seen from the first that such an adherence to the principle of "free choice" might be used as a method by the disgruntled insured person to find "a nice, kind doctor." By this means undue pressure has been brought to bear upon the practitioner, who, in refusing the certificate, loses his patient. This situation is likely to be changed in the near future by new rules as to immediate transfer.

It may well be doubted whether it is possible or practicable to set up a definite standard of health below which the worker shall be regarded as incapable; it is very difficult even for professional referees to define what they mean by incapacity. Generally speaking, if the exertion necessary to carry on the occupation for the normal hours is likely to aggravate the condition and do physical and bodily harm, the worker cannot be said to be capable of performing the work. Any case whose treatment involves continuous care and supervision cannot go to work. But in estimating the exact right of a particular patient to a particular certificate so much depends on the personalities of doctor and patient that genuine and conscientious opinions cannot be controlled by regulations. We do not want a set of regulations analogous to the excessive prescribing regulations for controlling the number of certificates given. On the other hand, it is not outside the bounds of possibility that the number of certificates of the various practitioners should be compared and some investigations made into the work of those whose figures exceed the district average. The referee work of the regional medical staff has had its effect in cutting down the period of sickness benefit in a proportion of cases, but the feeling ought not to spread among approved societies that if proper certification is wanted they must send every case to the referees, and even this will not have the desired effect unless every case is referred on the initial certificate, which is obviously impossible. Practitioners who have the benefits of the Acts at heart, and who are anxious that the services of specialists should be made available for their insured patients, will exercise all necessary care in a delicate position, but some effort should be made through the panel committees to see that the interpretation of the words "incapable of work" is made more or less uniform in each area.

THE CONTROL OF MALARIA.

AN interesting report [1] on the control of malaria in the plantations of Ceylon has been written by Sir RONALD ROSS, who lately paid a six weeks' visit to the island. It is now many years since he pointed out that elimination of malaria from a district depends on detection of the anopheline vector, and it is a significant commentary on this pronouncement that he was told, when in Ceylon, that all the species of anopheles which are capable of conveying local malaria have not even yet been determined. Everyone is well aware that all attempts to control malaria are necessarily expensive; but, as Sir RONALD ROSS remarks, it is not yet always clearly understood that malaria is expensive too. He gives a striking example of this in a comparison of four contiguous Cingalese estates, where money was lost by failure to tap rubber trees—this failure being attributed to malarial illness. The estates had spleen-rates of 15, 51, 76, and 76. Treating the last two as one the loss of receipts per 1000 blocks of trees, through failure to tap, was in the proportion of 1, 3, and 1000. The total loss for one month only was about £800, quite apart from all expense involved in treating the sick. Ignoring the humanitarian side, the elimination of malaria is financially profitable—a fact which is still far too little appreciated. One of the difficulties, however, is that money must be put down in advance to obtain this prospective improvement, and almost always it has to be borrowed. Loans are none too easy to secure; funds thus raised cannot be lavishly expended, and every penny must do its work. Whilst Sir RONALD ROSS is obviously right in saying that eradication of all anopheles larvæ is an effective means of getting rid of malaria, there are many who will differ from his opinion that too much is made of small differences in the habits of particular kinds of mosquito, because they think that wholesale destruction is more expensive than what is called species sanitation. This last involves close observation of the habits of adults and larvæ of the anopheles locally responsible for conveying malaria, and it seems likely that available money—of which there will be little enough—will increasingly be spent on the specialised destruction of those mosquitoes whose disappearance leads to the greatest financial gain.

The control of malaria in a country where it is prevalent is an undertaking which needs unremitting vigilance. This is perhaps the most important lesson to be learnt from a valuable report [2] recently published by the Malaria Advisory Board of the Federated Malay States. During the year, in spite of all that is being done, there has been an increase in Malaya in the number of malaria cases treated in hospitals—an increase attributed variously to a greater virulence of the parasites and to a large influx of malaria carriers, the result of vigorous recruiting from India. The suggestion that this influx of new blood (in a literal enough sense) is responsible for the increase of malaria falls in with certain findings and conclusions of the Malaria Commission of the League of Nations which recently toured in Eastern Europe. These are that inhabitants of any locality acquire immunity, or at least tolerance, to local strains of malaria parasites; that movements of large bodies of persons, some at least malarially infected, are followed by epidemic malaria—of which the tens of thousands of deaths in

[1] Malaria Control in Ceylon Plantations, a Report to the Ceylon Association, London, by Sir Ronald Ross, K.C.B., F.R.S.

[2] Report for 1925 of the Malaria Advisory Board. Supplement to "F.M.S. Government Gazette," Kuala Lumpur, 1926.

Russia in 1922 is a vivid example—and that these epidemic waves are reasonably attributable to the introduction of strains of malaria parasites to persons who have acquired no special immunity to them. This explanation, however, was not unanimously accepted for Malaya, as it was pointed out that the increase in malarial incidence began in certain estates before there was any increase in recruiting from India.

The Federated States Government has taken a number of immediately practical steps which it is interesting to record. Subsoil drainage pipes, which have been found so necessary in Malaya, are now buried at a minimum depth of 5 feet, and, if possible, 25 feet from trees, and the antimalarial engineer is now investigating the best means of dealing with those penetrating tree roots which may interfere with the proper action of the drains. The Advisory Board has also dealt with another matter of great practical importance—namely, the size of mosquito nets—and has laid down for government institutions minimal measurements of 6½ feet long, 4 feet wide, and 5½ feet high. The emphasis thus laid on the importance of a wide net agrees with, and is perhaps instigated by, H. M HANSCHELL'S observations in Central Africa. The Board advises that where mosquitoes are numerous the lower two or three feet of the net should be made of cloth, so that mosquitoes may be held off by the cloth if the limbs should come into contact with it. The net lies within the posts, is tucked under the mattress, and, during the day time, is drawn back on runners to the head of the bed. This arrangement is the one generally advised at the present day; but if the bed-maker be as trustworthy as the ordinary Indian bearer a yet wider net—trailing on the ground clear of the bed, put up during daylight after the bed has been soundly beaten, and suspended from the walls or roof of room or verandah—will give the added comfort of dispensing with a mattress and the increased protection afforded by its dropping some distance clear of the bed. A solution of magnesium sulphate was mentioned as a recommended mosquito repellent, but no member of the Board had found it, to say the least, lasting in effect, nor discovered anything more satisfactory than citronella oil. Nor did the possible breeding of bats as an anti-mosquito measure find any encouragement. Propaganda on malaria and other diseases has been successfully carried on at the three huge agricultural shows held during the year; the attendance at Kuala Lumpur fair was estimated at 70,000. But, after all, the most useful agents in propaganda are successful results of antimalarial measures, and it is significant that the *kampong* holders of one district have asked for money to embank and drain their compound, undertaking to do the work cheaply and pay the interest on the loan.

PAYING BEDS IN VOLUNTARY HOSPITALS.

THE cost of sojourn in a well-equipped hospital ward has grown steadily during the last 50 years and may, perhaps, now be regarded as having reached a fairly stable figure in the neighbourhood of £2 5s. a week. This at all events is the result of dividing by 52 the average annual cost of maintaining a bed in the voluntary hospitals of England and Wales, excepting the London area. There is a total of nearly 39,000 beds in these general hospitals and another 7300 beds in special hospitals; and in a report [1] which appears this week Mr. R. H. P. ORDE, acting director of Hospital Services for the Joint Red Cross Council, shows that 75 per cent. of the hospitals providing these beds have a credit balance on maintenance account for the year 1925, and their invested funds have increased by £6,000,000 during the last five years. Providing, as they do, facilities for investigation and team treatment not available elsewhere or only available at a very large outlay, it is natural that the demand for beds should become ever more insistent from the side of those who can afford to pay the cost of maintenance plus a fee for medical attendance. Response to this demand has already been made in one way or another at institutions, large and small, scattered over the country. As Mr. ORDE remarks, it is characteristic of the voluntary hospital world that practice precedes theory, and paying beds have been available in the infirmary at Preston since 1876 and at Liverpool since 1887, while at the present moment there are in England 171 provincial hospitals, 27 of them of large scope, which make some provision of this sort. The hope expressed by Mr. A. G. E. SANCTUARY at the Oxford meeting of hospital officers, that the medical profession would combine with hospital managers to expand and remodel the existing system of institutional treatment rather than leave the paying side of the work to be taken up by profit-making concerns, is evidently shared by the whole lay hospital service; the tone of replies received from hospital superintendents and secretaries embodied in an appendix to Mr. ORDE'S report is proof of this. One officer after another remarks on the voluntary hospital being the obvious and best place for any class of patient to be treated in time of acute illness, and several make a point of the permanent friends who would be gained for the hospital by having themselves experienced the amenity and efficiency of its wards. Diversity in the actual arrangements made is healthy enough in giving an opportunity of trying out possible alternatives, but there is a growing unanimity in the broad lines of practice. At Liverpool in 1887 a newly-built block included five one-bed wards, each with its own fireplace, on either side of a private corridor leading to one of the medical wards. At Brighton in 1923 eight single- and six two-bedded rooms were added, controlled and served by the main hospital. At Chester in 1921 private wards were opened in the form of cubicles, extended later into an adjoining wing with separate approach from the main staircase. At Northampton preference is shown for attaching two or more rooms to each ward unit. At Barrow, since 1921, two houses adjoining the hospital have been run as a private nursing home in connexion with it. At Burton-on-Trent a separate block of 18 beds was erected, connected by bridge and balcony to the main hospital, catering being done in the main building. Yeovil remarks on the saving of trouble and expense from having the side wards in the hospital and not in a separate block. Accommodated on one or other of these lines the patient pays from 3 to 7 guineas a week, the tendency being towards a standard fee of 5 guineas. With one or two exceptions the fee for professional attendance is a matter of direct arrangement with the hospital staff or the medical attendant who has sent in the patient. Rarely is inquiry made into private means, although at certain small hospitals fees are fixed by the house committee, and there is talk of appointing an almoner at Brighton. Several hospitals have the pleasing experience that it is unnecessary to do this as all who pay the standard fee augment according to their ability the charge made with a donation to the general hospital funds. It is evidence of this kind, so carefully collected in Mr. ORDE'S report, which enables Sir ARTHUR STANLEY to state in his foreword that there is no question of the call for these beds and to urge that sustained efforts should be made to provide them generally in the voluntary hospitals of the country. This is a development to be considered in the broad scheme of hospital coördination fore-shadowed by the Minister of Health.

[1] Report on the Voluntary Hospitals in Great Britain One of the valuable appendices to this report is printed on p. 986 of the present issue.

Annotations.

"Ne quid nimis."

DR. FOORD CAIGER'S RETIREMENT FROM THE M.A.B.

Dr. Frederick Foord Caiger retired from the service of the Metropolitan Asylums Board on Oct. 4th after an association of 39 years with the work of the infectious hospitals. He entered the service of the Board in 1887 as an assistant medical officer, and two years later was appointed medical superintendent of the South-Western Hospital, a post he continued to hold until his retirement. In 1893 his services were utilised in the opening of the Fountain Fever Hospital, Tooting, and six years afterwards he was deputed to open and organise the administration of the Grove Fever Hospital, Tooting, an institution of over 500 beds, which was urgently needed to meet an unusually high seasonal rise of enteric fever. At the end of 1921 Dr. Caiger was appointed chief medical officer of the Board's Infectious Hospitals Service, becoming at the same time emeritus physician to St. Thomas's Hospital. In his responsible position of fever chief he was called upon to guide the policy of the Board in such important questions as the use of the Schick test, the early administration of antitoxin in diphtheria, and the provision in the hospitals for cases of measles. Dr. Caiger was the first chairman of the Scientific Advisory Committee set up by the Board, after consultation with the Medical Research Council, to advise on the extension of knowledge by research and the full and prompt application of available knowledge to fever practice. As an outcome of this advice the Board in 1925 appointed a director of research and pathological services and decided to establish two thoroughly equipped group laboratories. Dr. Caiger's retirement will mean the loss to the Metropolitan Asylums Board of a wise and tactful administrator, and to the medical staff and students of a good clinician and an attractive teacher. In many capacities he has contributed to the efficiency of the public health services of the metropolis. We are glad to learn that his help will remain available to private practitioners in the difficulties which arise in the diagnosis and treatment of fevers.

POLIOMYELITIS AND SCHOOL INFECTION.

WE referred last week to the fact that the autumn increase in the prevalence of acute poliomyelitis and acute polio-encephalitis was greater this year than usual. Poliomyelitis was separated from other forms of paralysis and defined as a clinical entity by Heine in 1840; in 1887 Medin called attention to its occurrence in epidemic form; in 1913 Flexner and Noguchi isolated an organism which was capable of producing the disease in monkeys and could be recovered from the diseased animals in pure culture. This organism was present in the pharyngeal secretion of a large proportion of sufferers from the disease, and also in the secretions of contacts and of certain patients who presented non-nervous symptoms. The disease is now regarded as a specific infection, and, though many questions in regard to its epidemiology still remain unsolved, it is established that only a fraction of those who are infected develop the paralytic form of the disease. It would appear that the great majority of the population in civilised communities is immune to the infection, or at any rate well protected against it. Children in the first year of life seem almost immune; those in the second, third, and fourth years are the chief sufferers and account for 80 per cent. of all cases; after the age of 4 the incidence declines rapidly. The fact that school infection rarely plays any noticeable part in the spread of the disease in the larger communities suggests that nearly all children in such areas are immune by the time school age is reached. It seems likely that the immunity they possess is not the result of any bodily change as they get older, but is acquired by mild infection, for in rural districts with their more limited intercourse, the disease is acquired later than in towns, the average age of incidence being somewhat higher. In a community from which poliomyelitis has been completely absent for a number of years, the younger children may have had no chance of acquiring immunity and school infection may become a danger. Wickmann, in his study of the Swedish epidemic, recorded several instances of it. The account of the smaller but more recent Tübingen epidemic of 1922 [1] contains two instances of the spread of infection through institutions in which the children had had no chance of acquiring immunity. In a village several miles from Tübingen an epidemic of "influenza" with catarrh of the upper air passages as its chief symptom fell upon the infants' school and affected so many children that the school was closed by the authorities. Then the true nature of the infection was revealed, for the teacher and one of the pupils died from paralysis. The second instance was in a home for infants comprising 14 children; all the inmates suffered from "feverish colds" and their temperature charts, all very similar, suggested an ordinary slight "influenza" epidemic. But paralysis appeared in three of them. In another German village where poliomyelitis had not been encountered for 11 years still another instance was observed [2]; a boy, who himself later suffered from paralysis, is believed to have contracted the infection from a case in the street in which he lived, and continuing to attend school while suffering from catarrhal and even paralytic symptoms he was apparently the means of bringing the infection into his school, and the disease in its paralytic form into the homes of three of his class-mates, four members of these families being involved. Oppenheim supports the statement that an increase in the prevalence of poliomyelitis during the school term and a decrease during the holidays has repeatedly been observed. If a country succeeded by hygienic measures in stamping out the infection for, say, ten years, it would appear to be rendering itself liable to the danger of an epidemic in its schools. Should this be accepted, prophylaxis would lie not so much in hygiene as in the development of a positive means of producing immunity—a method similar to those now being employed for diphtheria and scarlatina, or, as a more temporary measure, the administration of immune serum obtained from convalescents, and, if a suitable technique can be devised, from animals.

STANDARDISATION OF ARSPHENAMINES.

IN the September number of *Clinical Medicine* will be found an article on the standardisation of arsphenamines, by G. W. Raiziss, who points out that since the introduction of arsphenamine and its derivatives mercury occupies a position of secondary importance in the treatment of syphilis. These products have remarkable effects upon syphilitic symptoms and the Wassermann reaction, and their therapeutic efficiency in experimental trypanosomiasis is very marked, the injection of a dose very much below the maximum tolerated dose producing a complete disappearance of trypanosomes from the blood of rats, even where millions of the parasites had previously been present. Discussing the chemical constitution of the arsphenamine group and the reactions resulting from the administration of these compounds, Dr. Raiziss ascribes the cause of these reactions to impurities in the drug, and points out the necessity for a standard which will reduce the toxicity and retain the curative power of the substance. The United States Government assessment of the tolerated dose of arsphenamine in experimental animals is 120 mg. per kg. of body-weight, and for neoarsphenamine 240 mg. per kg. of body-

[1] Schall: Münch. med. Wochenschr., 1923, lxx., 763.
[2] Graef: Ibid., 1925, lxxii., 55.

weight, but samples allowing doses of 180 mg. of arsphenamine per kg. of body-weight and 400 mg. of neoarsphenamine per kg. have been obtained. Thus a man of average weight should be able to tolerate a dose of 24 g. of neoarsphenamine, whereas the actual dose employed is only 0·9 g., so that the margin of safety is very large. Dr. Raiziss describes some of the tests which have been performed with a view to standardisation of these products, and mentions difficulties which have been encountered. The term "chemotherapeutic index" has recently been adopted in comparing the efficiency of various drugs. This is the value obtained by dividing the maximum tolerated dose by the minimum curative dose. A point which has yet to be decided is whether the administration of these chemical compounds actually eradicates the infection or merely extinguishes the visible signs. The lymph node transfer is a valuable criterion in this connexion, but, as Dr. Raiziss points out, there are still many problems of research to be solved before a standard preparation of arsphenamine can be prepared.

BANANA FLOUR AS A FOOD FOR INFANTS.

THE use of preparations of banana in the feeding of both sick and healthy infants has extended considerably in America in recent years. Dr. A. E. Vipond, of Montreal, was among the first to draw attention to its advantages; in a paper published in 1911 he described the treatment of infantile diarrhœa by feeding with a flour obtained by drying and grinding green bananas. In a more recent communication[1] he ascribes to banana flour a far wider field of utility and claims for it a prominent place in the treatment of infantile diarrhœa and cœliac disease, and also in the artificial feeding of infants. An analysis which he gives shows that 100 parts of the flour contain only 3 of protein and 0·5 of fat, while the carbohydrate reaches nearly 80. A small portion (7 per cent.) of this is in the form of dextrose; the nature of the remainder is not stated, but its components are said to be "entirely different from the other starchy components, and readily assimilable by the youngest infant." It is claimed that the flour is rich in vitamins and that in combination with condensed milk it forms an ideal infant food which will not cause rickets. The use of bananas in cœliac disease has received support from other authors (S. V. Hass, C. G. Kerley) and has been given trial in this country. Dr. Vipond believes that sufferers from this disease do not show intolerance to this as to other forms of carbohydrate, and that they benefit from the extremely low fat-content of the mixture. He considers banana flour and condensed milk to be the best food for infants who cannot be nursed and who do not thrive on modified milk. He refers to a very large number of successful cases and has no serious failures to record. This result would appear to be an example—comparable to the successes obtained by whole-milk feeding—of the remarkable powers of adaptation possessed by the infant, as the percentage of carbohydrate present in this mixture is enormous and the protein-content relatively small.

PNEUMONIC PLAGUE.

IN a long article published recently in the *Semana Medica* Dr. J. R. Paso deals with the relation between pneumonic and bubonic plague, and the genesis of pneumonic plague as a separate entity. His actual experience, he states, is limited to the bubonic form; he quotes cases in which pneumonia supervened on bubonic infection, but recognises that this event is no more than a complication. He has made, however, a thorough study of the literature, of which he gives a long bibliography, and from this survey has come to the following conclusions. (1) Bubonic and pneumonic plague are distinct, though they are both caused by the bacillus of Yersin, and occur together. (2) Pneumonic plague is disseminated by infection of the upper air passages with droplets proceeding from those already affected; it is not an infection of the blood stream, and is transmitted by contact, not by parasites. (3) In pneumonic plague Yersin's bacillus is not the primary factor, but is a *microbe de sortie*, falling on favourable soil, prepared by the invasion of other organisms. It is, in fact, a symbiosis in which the Yersin organism ultimately plays the dominant rôle. In conjunction with his chief, Prof. Destephano, Dr. Paso puts forward the hypothesis that epidemics of pneumonic plague are due to the simultaneous onset of influenza and plague under conditions which favour the propagation of both diseases—namely, filth, overcrowding, and cold weather. A desire for warmth, he remarks, drives people to herd together in their wholly insanitary habitations. Dr. J. N. White, who reported on this subject to the Health Committee of the League of Nations, says that it is necessary to assume some symbiosis in order to explain the facts; but it is generally agreed that further investigation of new epidemics is essential before any definite conclusion can be reached.

THE PRECIPITIN TEST FOR HUMAN BLOOD.

UNTIL a few years ago there were no tests for human blood. The criminal investigator could only state that the blood on a weapon or garment was that of a mammal, and the defence that the accused had recently killed a bullock or a pig would often be impossible to refute. The growth of immunology and the discovery of the precipitin reaction have, however, added enormously to the odds against the murderer. This test was the subject of a communication to the Medico-Legal Society on Oct. 28th by Dr. John Glaister, jun., son of the medico-legal adviser to the Crown for the West of Scotland. Dr. Glaister, who has performed over 1000 tests with antiserum in Glasgow University during the last two and a half years, concludes that the precipitin test may be safely applied under nearly all conditions. It is, however, as Dr. H. H. Scott pointed out in the course of the discussion, by no means foolproof. Not only must the man who performs it have adequate and sufficiently numerous controls, but he must, as Major C. Newcomb remarked, have much experience in performing the test. G. H. F. Nuttall, who worked out the biological tests for blood some 25 years ago, found a difficulty in getting good results from old blood-stains in the tropics, but Dr. Glaister has been successful with stains 16 weeks old, even when they have been exposed to dry heat up to 200° C. Temperatures between 210–230° C. change the blood so that it will not form a solution. Steeping in cold water does not affect the test, although the albumin of the blood passes to some extent into solution, but soap in the solution under test may cause clouding and render the results unreliable. It is, Dr. Glaister said, of the first importance that the antiserum should be absolutely clear. It should be tested by putting the same number of drops as are to be used in the test into normal saline as a control. The slightest cloud justifies the rejection of the whole solution. He stigmatised the use of opalescent antiserum as a dangerous pitfall in medico-legal work, because it produces a cloud in any clear solution to which it is added. The cause of clouding in serum is not yet known, though Dr. Scott pointed out that it might be due to killing the animal too soon after a meal, when there was still a large amount of fat in its blood stream. He suggested that the increased opalescence which appears when the serum is added to any other solution may be due to a colloid change, the fat becoming more finely emulsified. The error which results from the use of opalescent antiserum should be suspected even if it has been allowed to enter into an actual experiment, because the haze produced is distributed evenly throughout the tube, whereas the haze of a positive reaction appears only in the lower third of the tube. The reaction from an

[1] American Medicine. New series, July, 1926, vol. xxi., No. 7.

old stain is complicated by an upper zone of cloudiness due to bacterial invasion. Dr. Glaister confirmed Nuttall's observation that the presence of a second blood in the stain does not compromise the reaction, but found, nevertheless, that it reduces its strength. The absolute specificity of the precipitin test has been accepted by many expert pathologists, but Dr. Glaister found himself compelled to support the observations of Kister and Wolff, who showed that antihorse serum might give a positive reaction with human serum in an acid medium. He found that acid media interfered with the reaction and that alkaline media prevented it. This is probably due to the interaction between the blood-serum and the acid or alkali in the fluid under test. Dr. Scott agreed that it might be impossible to prove that human blood was not horse blood, but he has not found the converse to be true. The precipitin test is known to be unreliable when the stain is on leather, possibly as a result of some part of the tanning process. Dr. Scott had also found that stains on wall-paper were unsuitable for this test, and that it was necessary to bubble CO_2 through such materials as mortar, lime, and plaster in order to get rid of the calcium carbonate before testing. Dr. Glaister's exhaustive experiments with different kinds of wood, rough and polished, and with many kinds of material, showed, however, that the precipitin reaction remained unaltered, even after 14½ years in one woollen stuff. Dr. Glaister found that the foam test was of no value for indicating the strength of the blood serum present. He therefore introduced the "shaking test," which he found to give some guide to the strength. Both of these tests are of qualitative rather than quantitative value, and would be compromised by the presence of soap or anything else which produces foam. The colour-test also could be affected by many factors, such as CO_2, the age of the stain, the amount of the hæmoglobin, and the species of the animal which supplied the blood. Dr. Glaister has introduced certain refinements of technique, such as his microscopic cover-glass troughs, framed in black wax, which will be of interest to those who work with this reaction, and his careful survey of the field will strengthen belief in the medico-legal value of this test.

THE ROYAL COMMISSION ON MENTAL DISORDER.

IT is now just over two years since the Royal Commission on Lunacy and Mental Disorder held its first session. Public disquiet had been aroused by various publications and legal proceedings with their alleged "revelations," and the Commission was appointed under the following wide terms of reference:—

1. To inquire into the existing law and administrative machinery as regards England and Wales in connexion with the certification, detention, and care of persons of unsound mind, or alleged to be of unsound mind.

2. To consider the extent to which provision is or should be made for the treatment without certification of persons suffering from mental disorder, and to make recommendations.

The Commission, with this widespread popular anxiety in view, made it their special charge to hear patiently and consider carefully the evidence of all kinds of witnesses, and spent many months in a conscientious endeavour to establish a firm basis for their subsequent recommendations. The minutes of evidence, which have recently been published [1] and which occupy three large foolscap volumes, are the unadorned transcription of the shorthand notes and have neither preface nor summary. This mass of evidence includes that of medical associations, individual medical man, medical officers of mental hospitals, nurses, commissioners in lunacy, legal authorities, and ex-patients; 21,659 questions were put and answered. The appendix contains memoranda prepared by the British Medical and Medico-Psychological Associations, and a careful and complete index of the whole. These documents, together with the report of the Commission,[2] make very interesting reading for those who are concerned in mental hospital administration, and constitute valuable reference books for the library shelves.

[1] Part I., Minutes of Evidence taken Oct. 7th, 1924, to Feb. 10th, 1925. Questions 1–11,834. £1 1s. Part II., taken Feb. 24th to Dec. 11th, 1925. Questions 11,835–21,659. £1 1s. Part III., Index and Appendices. 10s. 6d. H.M. Stationery Office. 1926.

IMAGINARY ANNALS.

THOUGH the Royal Society of Medicine can claim ancient lineage, its roll of Fellows is necessarily confined to somewhat recent times, and there is ample scope for the kind of reconstructive history with which Sir D'Arcy Power entertained the Section of Comparative Medicine in his presidential address on Oct. 27th. Hippocrates, he thought, would have been chosen first President of the Section if it had existed in his day, for he realised that the diseases of men and of animals were closely allied. A candidate for honorary membership would have been a man of colour, Mago, the Carthaginian, who was termed the father of agriculture, and wrote 28 volumes on all branches of the subject. Xenophon, too, would have been a member, as he had a real interest in horses, and was skilful in their management, summing up his views in the words "keep the hoofs hard and the mouth tender." Vegetius would also have belonged to their body; far in advance of his time, he ridiculed the prevalent opinion that disease was evidence of Divine wrath; whilst Pliny would certainly have joined the Section, for, like the Master of Balliol, he took all knowledge for his province, and his "Natural History" was an eminently readable book. Next to Pliny, said Sir D'Arcy Power, Cornelius Celsus must have been included, though it was not clear whether he was a veterinarian or a practising doctor. Coming nearer to our own time, such a Section would have admitted to membership Conrad Gesner, who was designated the German Pliny, and who awakened science from its long sleep. He practised for many years at Zürich, and when, at 49 years of age, he died of the plague, he had written 49 volumes dealing with the habits and diseases of animals. Gervase Markham and Robert Lovell would likewise have found recognition, the latter for his complete history of animals and minerals—notwithstanding that Major-General Sir Frederick Smith wrote of him as a soldier, a scholar, a gentleman of fortune, a minor poet, a literary hack, and a social parasite. Had such a combination as the Section been formed in his lifetime, John Hunter would have been elected its President; Astley Cooper, Cline, and Simmons would have been associated with him, and Edward Jenner would have been persuaded to read a paper. Passing to recent times, Sir D'Arcy Power spoke of Charles Sainbel, William K. Parker, and Thomas Henry Huxley. In proposing a vote of thanks, Sir W. Arbuthnot Lane added to Sir D'Arcy Power's list the name of Æsculapius, which, he said, should certainly have been included; and Prof. F. Hobday, seconding, congratulated the Section on its President's erudition. We hope that the Royal Society of Medicine will invoke his aid if they should follow the example of some American societies and elect to posthumous Fellowships distinguished physicians whom accident of birth has deprived of this recognition in their lifetime.

OFFICE INTERNATIONAL D'HYGIÈNE PUBLIQUE.

THE final day of the October session of the Permanent Committee of the Office International d'Hygiène Publique, just concluded in Paris, was saddened by the announcement of the death of Mr. J. de Cazotte, the director of that organisation from its establishment in 1907 until his resignation, on grounds of ill-health and advanced age, after the International Sanitary Conference in June last.

[2] Cmd. 2700. H.M. Stationery Office. 1926. 3s. 6d.

While the value of his services to public health during this long term of office was always well known to his own international committee and in official circles, it was little realised, outside them, how much Mr. de Cazotte had contributed to the organisation and development of that mutual coöperation between the public health services of the world which is now accepted on all sides as a necessary and normal part of official international relations. A French diplomat, with no pretentions to medical knowledge or training, Mr. de Cazotte had acquired an experience and sagacity in all matters relating to international agreements on health questions, notably regarding the successive conferences and conventions which regulate quarantine and port sanitary work; these proved invaluable wherever such agreements had to be prepared and revised. Keeping always meticulously within the limits of his official duties, he had come to possess a sure instinct for discriminating between those matters which were officially appropriate and necessary for the effective functioning of the organisation he directed, and those which might infringe the cardinal statute that the Office International d'Hygiène Publique must not in any way interfere with matters of internal administration in any country. He had the satisfaction of seeing the number of countries which adhere to the agreement of 1907 steadily increase until now its committee includes technical delegates appointed by almost every government of the world; his untiring industry was largely responsible for the high standard which the monthly *Bulletin* of the *Office International d'Hygiène Publique* has always maintained, while his last official appearance was on the occasion of the completion of the International Sanitary Convention of 1926, and its signature by the representatives of nearly 70 governments. He has been succeeded in the office of director, as was fitting, by Dr. Pottevin, his medical collaborator during the whole of this period, who has long occupied a distinguished place in the domains of hygiene and in the French Senate, of which he is a member. The new director, in developing the wider policy and outlook which the Office International has assumed in consequence of the recent agreements and of its function as the Advisory Health Council of the League of Nations, undertakes a difficult task, but one for which the high reputation already possessed by the International Office will be an invaluable asset.

THE CAUSATION OF PHLYCTENULES.

PHLYCTENULES are among the most common affections of children met with in the ophthalmic out-patient department, and though, in the majority of cases, eminently amenable to treatment, are in a minority obstinately recurrent, leaving more or less permanent scars on the cornea which are responsible for a notable degree, not of blindness, but of impaired vision in the general population. The ætiology of the disease has long been disputed. Many have held that there is a real connexion between phlyctenules and tubercle, though exactly what no one has offered to explain. Tubercle bacilli have never been found in phlyctenules and to say that the affected children are, if not tuberculous, candidates for tuberculosis, does not carry us very far. The same might be said of any poorly nourished children. It is, no doubt, a fact that attention to the diet and nutrition of the child is an important element in treatment, but that does not explain the typical phenomena of the disease. Mr. Bishop Harman has put forward a theory connecting it with decay of the milk-teeth and suggests that the lesion is a herpetiform eruption caused by peripheral irritation of collateral branches of the second division of the fifth cranial nerve in ill-nourished children. So far as we are aware this theory has not received any marked degree of general support and it is obviously inapplicable to many cases that occur. Some new light on the subject is to be gathered from a contribution to a *Festschrift* by the Swedish ophthalmologist, Hugo Laurell, dealing with the pathogenesis of scrofulosis.[1] Put shortly, his theory is that the bites of human parasites may introduce into the host foreign proteids which give rise to a condition of anaphylaxis in which any external application of the same or even of kindred proteids causes a local reaction of which the phlyctenules are a manifestation. The parasites with which children subject to phlyctenules are most commonly infested are first worms, and especially oxyuris, secondly pediculi. Both cause local irritation and scratching, and the conveyance of the offending substance by means of the fingers to the conjunctiva must frequently take place. In dealing with affections so common among the children of the poor, it is obviously difficult to get any statistical proof of the connexion between these conditions that is not free from objection. At the same time a perusal of Dr. Laurell's article does leave the impression that there probably is some truth in this theory. At any rate, he has pointed the way to a direction in which research would appear to be hopeful. It is established that phlyctenules can be experimentally produced by the local instillation of tuberculin or of dead tubercle bacilli in animals already infected with tuberculosis. Funaishi has found that in non-tuberculous animals injected with non-tuberculous bacteria (staphylococci, &c.), instillation of the proteids of these bacteria has a like effect. It is, therefore, clear that tuberculosis is no necessary antecedent to phlyctenular disease. Laurell's theory is that the subjects of phlyctenules, having been inoculated with the proteids of parasites, usually oxyuris or pediculi, reinfect their eyes by means of their fingers which carry the noxious material from the infected spots to the conjunctiva. If this is a fact one would expect to find phlyctenules more often at the inner margin of the cornea than at the outer. Mr. Harman found that 70 per cent. were situated in the outer and upper quadrant, the spot to which the orbital branch of the second division of the fifth nerve sends its terminal twig. This is a point which might be reinvestigated.

WE regret to announce that Francis Mitchell Caird, emeritus professor of clinical surgery in the University of Edinburgh, died on Nov. 2nd.

THE Bradshaw Lecture of the Royal College of Surgeons of England will be delivered in the theatre of the College by Prof. E. W. Hey Groves next Thursday, Nov. 11th, at 5 P.M., the subject being Reconstructive Surgery of the Hip-joint. Students and others, who are not Fellows or Members of the College, will be admitted on presenting their cards.

The Services.

ROYAL ARMY MEDICAL CORPS.

Col. H. B. Fawcus to be Maj.-Gen.

The undermentioned Capts. to be Majs.: H. S. Milne (Prov.), Q. V. B. Wallace, F. C. Chandler, and T. F. Kennedy.

Capt. A. P. Draper, is secd. for serv. under the Colonial Office.

TERRITORIAL ARMY.

Capt. J. H. Cobb to be Maj.

ROYAL AIR FORCE.

H. Penman is granted a short service commission as a Flying Officer for three years on the Active List.

Flying Officer N. I. Smith ceases to be seconded to the King's Cross Hospital, Dundee.

Flight Lt. T. M. Walker is transferred to the Reserve, Class D.2.

INDIAN MEDICAL SERVICES.

Temp. Lts. Girdhari Lal Puri and Daya Ram Malhotra to be Temp. Capts.

Tharmale Govinda Raghava Panikkar to be Temp. Lt.

[1] Upsala Läkereforenings Förhandlingar, Upsala, 1926 (article published in German).

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXCVI.—THE TREATMENT OF INFECTION OF THE NASAL ACCESSORY SINUSES.

FOR some years there seems to have been an increasing number of cases of acute sinusitis during the period autumn to spring, after which only sporadic cases occur.

Symptomatology.

In a typical case the patient gives the history of a severe cold. During the first week aching and throbbing of the cheeks and at the back of the eyes, nasal obstruction, and brow-ache with mucoid secretion occur. The condition may then subside, or, if neglected, the pain may become more intense and more localised, usually over one cheek with tenderness to pressure in the region of the inner canthus or in the supraorbital region, which becomes definitely painful and tender. With the pain there is nasal obstruction, followed by muco-purulent or purulent discharge on the affected side. In other cases there may be most pain in the temporal region, or frontal and vertical headache with tenderness in the occipital region and stiffness in the back of the neck. Or a sharp attack of influenza with nasal symptoms may leave a unilateral discharge from the nose or a persistent post-nasal catarrh. Later the only symptoms may be a bad smell in the nose. Very severe or fulminating cases may show signs of acute septic absorption or even septicæmia, the patient becoming rapidly worse, with a swinging temperature, and later drowsy and toxic. Meningitis, thrombosis of the frontal vein, or osteomyelitis with spreading œdema of the brain may follow, especially when the frontal sinus is involved. In most of these severe complicated cases there has been neglect of a bad cold, an unrecognised acute sinusitis, or a chronic inflammation which has suddenly lit up.

Differential Diagnosis of the Sinus Affected.

Roughly speaking, unilateral brow-ache suggests frontal sinusitis; pain deep to the eye and especially at the inner canthus suggests ethmoiditis. Face-ache suggests maxillary antritis; occipital and vertical pain, sphenoidal sinusitis. Similarly, tenderness over these regions may help to localise the lesion. There are, however, several traps here; for instance, the pain of acute maxillary antritis may be localised to the temporal or supraorbital regions on the affected side. The headache may be occipital, vertical, or frontal in cases of ethmoiditis without involvement of the sphenoidal sinus. Routine examination should, therefore, always be made.

Anterior Rhinoscopy.—On examining the anterior nares with a nasal speculum, swelling and congestion of the middle and inferior turbinals will be the only sign of sinusitis unless the sinus has commenced to drain. Later mucus or muco-pus may issue from under the anterior end of the middle turbinal, when the antrum or frontal sinus are affected and still later a streak of definite pus will be seen.

Posterior Rhinoscopy.—With the post-nasal mirror a streak of pus may be seen coming down from under the posterior end of the middle turbinal, since the antrum often drains backwards. If the posterior ethmoidal cells or the sphenoidal sinus are involved the streak of pus will issue high up in the post-nasal space above the posterior end of the middle turbinal.

Transillumination is most useful in antritis. Absence of a crescent under one eye is diagnostic of past or present antritis. A clear crescent under each eye negatives an acute or chronic affection. Transillumination of the frontal sinus is inconclusive, the diagnosis being more easily made by the presence of tenderness, swelling, or reddening over the area combined with the results of anterior rhinoscopy and radiographic examination.

It is noteworthy that—

(1) In some persons, especially men with thick and heavy upper jaws, a crescent under the eyes cannot be seen.

(2) An antrum which has previously been operated on may remain dark on transillumination.

(3) Where a large antral polypus occupies the antral cavity the latter will be hyperclear to transillumination but dark to a radiogram.

Radiographic examination is most valuable since, if all the sinuses are clear, sinusitis can be definitely excluded.

In certain individuals a severe cold always means involvement of the antra so that the latter, though transparent between attacks, become temporarily opaque to transillumination and radiogram. In others a series of acute attacks has produced a chronic sinusitis. Again, a patient may have a chronic antritis shown only by post-nasal catarrh in the mornings, or an inflammation of the frontal sinus, of which the only signs are periodic attacks of frontal neuralgia and some nasal catarrh. If such patients contract an acute nasal infection, the already degenerated and polypoid mucous membrane of the cavity previously affected cannot easily recover, and operation on an acute on chronic antritis or ethmoiditis is not unattended by danger; again, in frontal cases, osteomyelitis of the frontal bone may supervene, the prognosis being very bad.

It may be taken almost as an axiom that a patient ill with a heavy head cold and with unilateral pain in the face, temple, or brow has an extension of the inflammation of the mucous membrane of the nasal cavities into one or other nasal accessory sinuses. Probably in any severe nasal infection, the mucous membrane of the sinuses is involved, since they are all continuous in their mucous lining and communicate with the nose. It does not follow because the mucous membrane of a sinus shares in the congestion and hypersecretion of the nasal mucous membrane that surgery is indicated; in fact, in most cases, especially when the maxillary antra and ethmoidal cells are involved, medical treatment will be effective, the inflammation will resolve, and the cavity return to the normal. The exception to this is (1) when the natural opening of the sinus becomes so blocked that the cavity cannot drain, retained muco-purulent secretion becomes purulent, and the lining membrane of the cavity becomes so damaged that it cannot recover without artificial drainage; (2) when signs of general toxæmia or septicæmia are urgent indications for the drainage of the septic focus; (3) when the acute condition does not clear up but becomes subacute or chronic.

The maxillary antrum may be infected from a tooth, usually the first or second molar or the second bicuspid; the canine rarely or never infects the cavity. The infection occurs from infection of the tooth socket or from an apical root abscess. The abscess may burst directly through the antral mucous membrane or the infection may extend through the membrane without its rupture. It often follows or is ascribed to the removal of a tooth and this is not surprising, since a tooth may be removed because of an apical abscess, when infection of the antrum has already taken place, or the removal may leave a fistula into the cavity. Not infrequently there is no bony covering between the tooth root and the cavity, the apex being covered only by mucous membrane, which may be torn during extraction, leaving a communication between the septic alveolus and the antrum.

If an acute antritis has a dental origin the proper procedure is to remove the tooth. If a communication with the antrum is established by this means it is justifiable to wash out the cavity through the fistula once or twice, but the fistula should then be allowed to close, routine treatment of the acute antritis being carried out. The patient should not be encouraged to force lotion from the mouth into the antrum. The archaic treatment of acute antritis by removing a sound tooth and then inserting a screw plug or tube so that the fistula could be kept open and the antrum washed out through it, is now happily a thing of the past. Such a procedure allows of continued reinfection from the mouth, and frequently converts an acute antritis, which would probably clear up, into a chronic condition.

General and Local Measures.

The patient should be put to bed, the head being propped with several pillows. The bowels should be kept well open and ordinary medicinal treatment given if there is pyrexia. A steam inhalation should be given four-hourly, the steam being inhaled through the nose and exhaled through the mouth.

The simplest method is to use a quart jug half full of boiling water; a bath towel is placed over the head and jug and the patient inhales as long as the steam rises, usually about five minutes. As a basis Friar's balsam is a useful inhalant,

strength ʒ i. ad. O i. boiling water. To this may be added a little menthol or pinol.

In cases of antral infection, after the inhalation the patient should "posture"—i.e., lie with the head hanging over the side of the bed on the opposite side to the sinusitis—and then sit up, close the nostril on the sound side, and try gently to blow out the secretion from the other. The nose should not be blown with a handkerchief, nor should it be blown violently, especially if the turbinals are congested and there is nasal obstruction, for pus may be blown up the Eustachian tube and infect the ear.

In between the four-hourly steam inhalations the patient should use a fine nasal nebuliser containing the following or similar prescription:—

Menthol gr. xv., cocaine gr. iv., glycerine ʒ iii.
Tr. benzoin simplex ad. ʒ i.

If the vestibule of the nose becomes dry or cracked sterilised vaseline or cold cream may be applied.

Treatment should be continued until the secretion drains away and there are no pressure pains in face or forehead. If the secretion does not drain well, owing to obstruction of the osteum maxillare or infundibulum, relief is often obtained by the following procedure:—

A pledget of cotton-wool is soaked in 10 per cent. cocaine and then squeezed so that it is only damp. It is then placed between the middle turbinal and the septum, so as to shrink the latter. This pledget is removed and a second one placed under the middle turbinal so as to shrink up and open the outlet from the antrum, frontal sinus, and ethmoidal cells.

After cocainisation, steam inhalation and, in the case of antral infection, "posturing" should be employed. If the antrum does not drain despite these methods, puncture through the inferior meatus, together with lavage, may be used. As a solution for this purpose an antiseptic and alkaline lotion, such as glyc. thymol co., B.P.C., should be used to which has been added 1 drachm of tr. iodi. to one pint of the lotion. Placing a hot box (i.e., one arranged with electric bulbs on the principle of the ordinary heat bath) over the head may promote draining and relieve pain. Artificial sunlight has also given good results. These measures may be combined with autogenous vaccines, except in the acute stage, when a serum is preferable, together with adequate drainage.

Cocainisation, followed by steam inhalations, should be employed in all cases of acute sinusitis. Posturing is particularly useful in the case of the antrum. It must be remembered that in these acute cases there is often an acute polysinusitis—that is to say, the anterior ethmoidal cells, frontal sinus, and antrum may be also involved.

Precautions in Operation.

In acute cases where operation is indicated it should be limited to free drainage of the affected sinuses, with as little traumatism or disturbance to the tissues as possible. To open up new surfaces may allow a fresh inlet to infection and produce septicæmia.

In acute antritis the cavity should be opened for drainage if necessary, but the Caldwell-Luc operation should not be performed. In frontal sinusitis the anterior end of the middle turbinal should be removed, the infundibulum enlarged, and the sinus washed out. If this is not sufficient it must be opened and drained in the supra-orbital region. In ethmoidal sinusitis there may be rapid necrosis and disorganisation of the cells; safety again lies in free drainage, the necrosed tissue being rapidly but gently curetted.

It is rare to find the sphenoidal sinus attacked in acute cases, but if it is, the ethmoid will probably be involved too, when access should be obtained by removal of a portion of the middle turbinal, the opening of the sinus enlarged, and the cavity washed out.

Conclusion.

In genuine acute attacks of sinusitis obtain drainage by medical means if possible; if not, simple surgical drainage should not be delayed. In chronic cases a radical operation should be performed during a period of quiescence, free drainage being given and any hopelessly degenerated mucous membrane removed.

G. SECCOMBE HETT, M.B. Lond., F.R.C.S. Eng.,
Surgeon to Ear, Nose, and Throat Dept., Univ. College Hosp.

Special Articles.

NOTES ON THE MOTOR SHOW AT OLYMPIA.

THIS year the Motor Show was distinguished by lower prices and better cars. Four-wheel brakes, low-pressure tyres, shock-absorbers, and the cellulose finish are general. The standard of value is so high and such pains are taken over equipment and finish, especially of the covered cars, that it is not a little disappointing to find the same minor faults of design perpetuated by makers of the greatest experience in cars which are otherwise first class. The simultaneous demand for four-door saloons and right-hand control has resulted on car after car in the anomaly of a driver's door by which no driver, however agile, could possibly leave the car. The doctor should be extremely careful to see that the car he chooses has a driving position in which he is certain of remaining comfortable all day and in which he can reach the controls without leaning forward. Some of the best-known models leave very much to be desired here. On one, in particular, the right-hand gear-lever is so arranged that the handle would be inaccessible if the driver had a stiff knee or were wearing a skirt. Several hand-brake levers are so close to the body-work that the driver cannot put his hand round them. These faults outweigh any number of silk window-blinds, antique leather cushions, and electric cigar-lighters.

The 1926 show will be remembered by two features—the "small sixes" and the £100 cars.

£100 Cars.

There were two £100 cars at Olympia and a third, the Lafitte, at the Paris Salon. The last is driven by a three-cylinder radial air-cooled engine, and is hardly a car for the doctor. Of the two British attempts to market a car at this figure one is the Waverley, made by the well-known makers of that name, and the other is the Gillett, made by the Ensign Motor Co. The Waverley is very low and not very attractive in appearance; its engine is an opposed water-cooled twin resembling that of the Jowett and placed behind the back wheels, one of which it drives through a G.W.K.-type friction gear. The car is wound up at the tail.

The Gillett has a self-starter, a speedometer, balloon tyres, and all reasonable equipment, and follows orthodox car practice throughout. It has ample leg-room for two and a boot for luggage or two occasional passengers; its overhead-valve engine will propel it at 30 m.p.h. on middle gear and 50 on top; its steering-lock is ample and its four-wheel brakes as effective as those of a large car. It will not, however, be ready before April. It deserves to succeed, and may yet solve the car problem for many indigent practitioners.

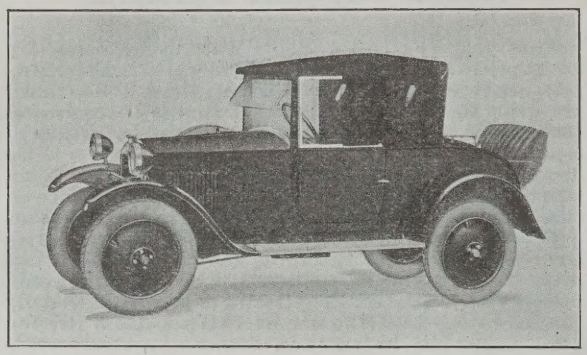
Covered Cars for the £200 Purse.

The 7/12 Peugeot cabriolet (Fig. 1) is one of a type of small coupés common in France, but unknown (with the doubtful exception of the Austin 7) in England. Its close-fitting hood and sliding windows give that positive protection that no all-weather equipment can. It is neat-looking, and would suit a modest town practitioner very well, but its low gear ratio would make it tiresome on a long country round. It has a single dickey with a smart luggage-grid on the trap-door, and its price, £165, includes all the usual modern equipment and a cellulose finish.

The 7 h.p. Jowett four-door saloon always seems an impossibly huge body for so tiny a frame, but the car appears to do the work. At £185 it is a good bargain. The rear passengers have a surprising amount of leg-room, but the roof is a little low. Its chief advantages is its £7 tax and its low running costs. Another £10, however, will secure the Morris-Cowley saloon at £195, and many doctors will consider the extra annual cost well repaid by the greater reserve of power latent

in this 1560 c.c. engine. Morris Motors have stolen a march on their rivals by producing a full saloon at less than £200, and a well-finished and well-made one at that.

FIG. 1.

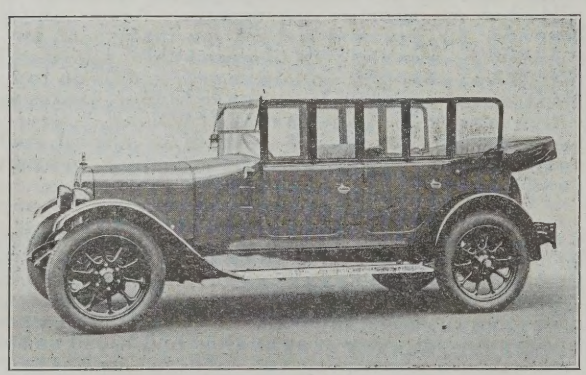


7/12 Peugeot cabriolet.

Up to £300.

There is always a large group of practitioners who, having run a cheaper car for some years, feel that at last they can afford a little more. It is these who really get the fun out of a show, as they have a field of choice at least five times as wide as that of their friends who only wish to spend £200, and they know that even if they were spending £1000 they could only get a bigger car, not one better made or more luxuriously fitted and probably not even a faster one. The first competitors for their notice are, of course, Morris-Oxford, Clyno, and Citroën, with saloons at £265, £250, and £240 respectively. The coachwork of the Citroën is not so well finished, and for most people the choice will remain between the Morris-Oxford 14/28 (which is really only a 12) and the Clyno 12/28 (the engine of which is smaller even than that of the Morris-Cowley). The equipment of both is prodigal and the choice is really between 300 c.c. of engine capacity and £15. Coupés are a shade cheaper than saloons. Those who are prepared to pay more than £250 for a really fine open car should consider the Austin Clifton tourer at £275. In Fig. 2 it

FIG. 2.



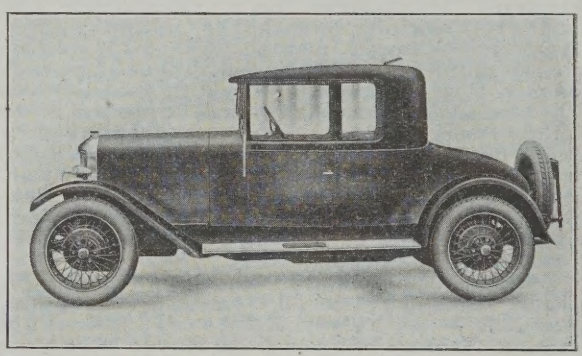
Austin Twelve "Clifton" Tourer.

is shown with screens up. A compromise in build is the Lea-Francis 12 h.p. semi-coupé at £295. "Semi" implies a coupé hood, but side-screens instead of railway-carriage windows; the protection is ample. This car has four speeds and an overhead-valve engine, and is thoroughly good in every way. The Rover 9/20 has been immensely improved by having semi-elliptic springs fitted in front to take the strain of the front-wheel braking. The engine has an exceptional performance for its size. For the general practitioner the detachable head coupé model at £235 is almost ideal, for it is a closed car which can be changed into an open two-seater in a few minutes by taking off the head and substituting an ordinary hood. The permanent coach-built coupé costs £285. The small Fiat (tax £8) is one of the most interesting of this year's cars. Its engine is just under a litre in size, but is highly efficient. It was originally called a 7, but is now advertised as 9 to do justice to its roominess and power. It has exceptionally good body-work, and the coupé at £265 is likely to attract many doctors away from the British market. The Bean 12 two-seater at £275 and "short 14" two-seater at £295 both have four speeds and roomy bodies and can be thoroughly recommended.

Up to £400.

One of the most attractive doctors' cars in the show, if not the most attractive, was the 12/40 Riley Wentworth coupé (Fig. 3). Its outstanding feature is that behind the driving seats is a space large enough for two people's luggage or two occasional seats. Two more passengers can ride in the dickey. The driving position is admirable, and either central or right-hand control can be supplied. The rear window is very large and there is an efficient roof-ventilator. The price is £385 only. The Windsor 10/15 is not so well known as most English cars, for the reason that it is made in comparatively small quantities, but it bears the marks of very careful workmanship and is superior in finish

FIG. 3.



12/40 Riley Wentworth coupé.

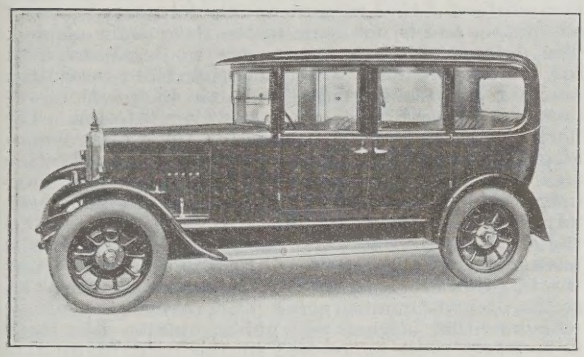
to many much more expensive makes. The coupé and saloon are both sold at £395 and there is no better value in the show. The driving position is good. Another splendid car of this kind is the Galloway 12/30, a small Arrol-Johnston. The fixed-head coupé at £375 has, besides its comfortable driving position, several individual features, such as room for a bag behind the driving seats and a wind-screen with small inclined side-panels, a construction which completely eliminates the "blind-spot" that spoils so many covered cars. It is impossible to leave this class without mentioning the Austin 12 Windsor saloon at £350. Besides being one of the handsomest and most dignified cars of its size in the show, it is equipped on a scale which must cut the makers' profit down almost to nothing. The Standard Motor Co. have once again produced a six-cylinder car, and, good as their pre-war one was, the newcomer will certainly be much better. It has an exceptionally graceful straight line from the shoulder of the radiator to the scuttle, and thence to the rear. The "Corley" coupé is finished in fawn, crimson, or blue cellulose, with leather to match, at £385, and a similar 14 h.p. 4-cylinder coupé costs £315.

Over £400.

Generally speaking, money expended in excess of this sum will buy more power but not higher quality, but there are a few cars in which a high first cost really represents unusual accuracy in mating parts and cutting gears. One of these is the Alvis, an 11·9

which is far and away better than everything of its size but the Aston-Martin. The 2/3-seater with the semi-coupé head at £485 is the model perhaps most likely to appeal to medical men, while the saloon (Fig. 4) is a beautiful car. The equipment is everything that could be desired. The Wolseley Company are showing a new 16/45 six-cylinder model of two litres capacity which many experts say is the best car they have ever built. Its engine is vibrationless up to 60 m.p.h., and the seating arrangements are

FIG. 4.



12/50 Alvis saloon.

very roomy. The sides are high and the side-curtains make a complete weatherproof fit. At £450 for the two- or four-seater it is a remarkable bargain. The 18 Armstrong Siddeley, which has now been a favourite for some years, represents a successful attempt to make an English medium-powered six-cylinder car at the price of an American one, but much better. The "Harlech" coupé at £540 accommodates three people abreast, one definite advantage of the larger car, and provides locker space behind the adjustable seat-back and a double dickey. The Ansaldo is an Italian car which has gained considerable popularity in this country. Four models are made, including a two-litre six-cylinder.

More Expensive Cars.

In the frankly expensive class there was a 14/40 Vauxhall on Mann Egerton's stand which would do credit to any specialist. The body is a fixed "saloon coupé" corresponding rather in arrangement to the "occasional four" of the humbler makes, with two tip-up seats behind the main bank and a large open space for luggage, also a double dickey. The finish is dark green cellulose, with upholstery to match.

American Cars.

The Overland Whippet is American only in type, for it is manufactured in Canada and designed almost like an English two-litre car. The five-seater touring car at £198 and the saloon and fixed-head three-seater coupé at £234 each, fully equipped, are excellent value. The coupé has an anti-glare visor of green glass. Studebakers have put on the market what is really rather a wonderful car, the Erskine 16/40 h.p. six-cylinder. The capacity is about two litres and a third. The makers claim to have designed and built a car to an "ideal" specification embodying the composite demands of motorists of all countries. The unsightly detachable rims and the somewhat meretricious appearance of even the good American car are refreshingly absent, and the general appearance is very good indeed. The price is absurdly small—£295 for a really well-built saloon.

The Chrysler is a most satisfactory American car of the better class. Three models are made, all six-cylinders, the "60," the "70," and the "80." The figures relate loosely to brake horse-power and maximum speed. The "60" touring-car costs £380 and the coupé £425. The R.A.C. rating is 21.6 h.p.

Accessories.

Judging by the equipment now regarded as indispensable to the modern car and included in its price, one might be excused for asking how the retail accessory dealer manages to make a living. The galleries did not indicate, however, that his prosperity is seriously impaired. There are still some useful accessories that are not standard equipment. For instance, the student of the catalogues might search through many before he found mention of a fire-extinguisher, and yet a chance petrol fire would reduce the glory of the most magnificent saloon to wreckage in 30 seconds. A Pyrene is a complete fire insurance policy in itself and costs £3 3*s*. No car should be without it. Another quite indispensable accessory that is practically never given with the car is a Schrader tyre gauge, price 7*s*. 4*d*.

The jacks and pumps supplied with many cars are not all they might be, and the owner-driver will often prefer to make his own choice. For light cars the "Atlantic" lazy-tongs jack is pleasant to work with, as it lifts very quickly, and the "Quiftlick" ratchet jack is a joy. The doctor should prefer a jack that lifts with an up-and-down movement before one that screws. Hydraulic jacks are expensive but pleasant; Ross Courtneys' "Little Jackie" at 50*s*. is a good example. Foot-pumps can be used with less strain than hand-pumps. The Dunlop at £2 2*s*. is satisfactory; one of the best is the "Mac-Pneu," which has two cylinders and two pedals and is worked by "marking time" with both feet. Lodge this year showed a still larger range of sparking plugs, including models especially designed for Morris, Ford, and Daimler, a priming plug through which petrol may be injected in cold weather, and a miniature plug.

MEDICINE AND THE LAW.

Successful Claim for Fees.

"THE moderation of most doctors with regard to fees always surprises me," observed Mr. Justice Roche last week during the hearing of a surgeon's claim in respect of professional services. The plaintiff, Mr. E. J. Deck, of 55, Welbeck-street, was suing Captain A. C. G. Smith, of the Royal Automobile Club, for £65, representing treatment over many months. Sir Alfred Fripp, a witness for the plaintiff, approved the treatment administered and stated that he considered the fees charged were very reasonable. It was at this point that the learned judge interposed the observation already quoted. The case contained no point of law. There was no question that the services had been rendered. Captain Smith, suffering from swellings in the neck, consulted Mr. Deck who administered treatment by ultra-violet rays. The defendant also attended a dentist who advised the extraction of his teeth, the dentist stating in court that his fees also remained unpaid. Eight months after his first consultation with Mr. Deck Captain Smith went to another surgeon and was operated upon. He took the view that his previous treatment had been wrong and, in answer to the plaintiff's claim for his fees, he set up the defence that the plaintiff had been negligent in the diagnosis and treatment of the case; he also counter-claimed for damages on the ground of this alleged negligence. The jury found for the plaintiff and judgment was given for Mr. Deck for the full sum claimed with costs on the High Court scale, as well as on the counter-claim.

Woman Juror's Illness.

Since June 1st, when Section 15 of the Criminal Justice Act of 1925 came into force, the death or illness of a juryman in a criminal trial is no longer a cause for breaking off the hearing and starting afresh with a new jury. At Chester Assizes last week a woman juror showed signs of faintness during a manslaughter trial. The judge deemed her incapable of continuing to act, and the trial proceeded without

her. This can be done under the Act provided that assent is given in writing by or on behalf of both the prosecution and the accused, and provided that the number of remaining jurors does not fall below ten. The Sex Disqualification Act, which first made women competent and liable for jury service, allowed a woman to apply to be exempted from serving in respect of any case "by reason of the nature of the evidence to be given or of the issues to be tried." Exemption is freely granted under this provision. The Act also allowed women to be excused attendance as jurors if they were "for medical reasons unfit to attend." This concession is amplified by the various rules governing procedure in criminal cases, in the High Court and in the County Court. The summons to a woman juror must, under these three sets of rules, notify her that she may apply for exemption from attendance "on account of pregnancy or other feminine condition or ailment," if the application is made within a fixed time-limit. The rules provide that the application may be substantiated by medical certificate or otherwise.

What is "Wine."

Mention was made last week of the conviction of a Brighton chemist for selling "Wincarnis with quinine" without being the holder of a justices' licence to retail intoxicating liquor. The magistrates had decided that the liquid was wine and the High Court declined to interfere. The law does not attempt to define wine on any standardised basis of chemical analysis. Acts of Parliament, of course, look upon intoxicating liquor from many different points of view. Thus an Inland Revenue Act of 1880 says "wine" includes sweets, and "sweets" include "made wines, mead, and metheglin." For the purpose of the liquor licences duties under a Finance Act of 1910, "wine" means wine imported into Great Britain and Ireland, while a Finance Act of 1920 mentions that "wine" includes lees of wine. These scattered interpretations bring us no nearer to knowing what constitutes wine for the general purposes of the law. The Refreshment Houses Act of 1860 essays a rule-of-thumb definition of spirits—"any fermented liquor containing a greater proportion than 40 per centum of proof spirit"—and in the same section it is laid down that liquor sold or offered for sale "as being foreign wine or under the name by which any foreign wine is usually designated or sold" shall be deemed foreign wine as against the seller. Under this latter provision a person who was licensed only to sell sweets and who, being asked for a bottle of the best sherry, supplied a bottle labelled "Best pale sherry, British," was held properly convicted of selling foreign wine. Sherry, evidently, means sherry from a foreign country where recognised sherry is produced. Parliament has given a similarly restricted meaning to port and madeira. The Anglo-Portuguese Commercial Treaties Acts of 1914 and 1916 declare these wines to be the produce respectively of Portugal and the Island of Madeira, and they penalise as a false trade description the application of the terms "port" or "madeira" to any other liquid, although those British Dominions overseas which are developing wine-making industries are known to deprecate the limitation.

Non-alcoholic Wine.

Does wine necessarily mean something alcoholic? Apparently not. The Public Health (Preservatives in Foods, &c.) Regulations, made last year, schedule a list of articles which may contain a limited quantity of preservative, and they allow a small proportion of benzoic acid to be added to "non-alcoholic wines." This expression was quoted in a prosecution at Salford last August when a confectioner was summoned under the Sale of Food and Drugs Acts for selling a "meat and malt wine" not of the nature, substance, and quality demanded. In the Wincarnis case at Brighton the defendant owed his conviction to the fact that the liquor contained too much alcohol; in the Salford case it was complained that the meat and malt wine contained no alcohol at all. The city analyst certified that a sample showed 81·2 per cent. of water, 16·4 per cent. of sugars, and 2·4 per cent. of extractive matters. In this last item was 0·06 per cent. of phosphoric anhydride, indicating traces of a mixture of meat and malt extract. It was stated that a genuine meat and malt wine should have at least 5 per cent. of a mixture of equal parts of meat and malt extract with a wine basis. The sample was entirely deficient of wine; it was sold for 4*s.* 6*d.* and a witness estimated the total value at less than 6*d.*, bottle and all. The bottle was labelled "non-alcoholic," but the prosecution contended that wine means the fermented juice of the grape, and is not wine unless it contains alcohol. The defence was that there was no legal standard for a meat and malt wine, and that the prosecution had not established that the bottle in question was not a meat and malt wine, however inferior. The defence also relied on the use of the words "non-alcoholic wines" in official publications, as showing that wine need not contain alcohol. The stipendiary magistrate seemed to think the public had been imposed upon but felt obliged to acquit the confectioner in view of the legal points raised. Those who have to study the Sale of Food and Drugs Acts would probably agree that it is high time that this series of enactments, going back over 50 years in which neither science nor public opinion has stood still, might well be revised in the light of modern requirements. Sir Mackenzie Chalmers, a former Parliamentary counsel, has placed it on record that he once suggested to a departmental official that these statutes should be consolidated and reduced into one orderly document. "What is the necessity?" was the reply; "we know all about the Acts within the department, and the public finds out in the police-court!"

Enforced Resignation from Hospital Staff.

On Oct. 27th a civil action was tried before Mr. Justice Branson in Liverpool, in which the plaintiff, Dr. Isaac Harris, sued the ex-chairman of the lay committee of the Northern Hospital. Dr. Harris first became connected with the Northern Hospital in 1913 as a clinical assistant on the medical side. His interests lay chiefly in diseases of the heart, and when a cardiograph was installed he was put in charge of it, and in 1919 was formally recognised as head of the cardiographic department. Apparently there was friction between Dr. Harris and other members of the hospital staff, culminating in a refusal on their part to allow Dr. Harris to examine certain patients and the refusal of Dr. Harris to take cardiograms and issue reports without such examination. About this time Dr. Harris was appointed hon. physician to the newly-established heart hospital, and it was suggested that it was inadvisable that he should hold both positions. Finally at the annual meeting in this year, when the names of the medical staff were submitted for re-election, the name of Dr. Harris was omitted from the list. His post being in this way rendered vacant another medical officer was subsequently appointed. Dr. Harris maintains that he asked for a committee to inquire into the offences he was alleged to have committed, but that no notice was taken of his request. During the whole forenoon the facts were gone into before the court, but finally in the afternoon it was announced that the matter had been arranged. The judge in court made it evident that for him two points stood out above the others: first, that whereas it was part of his duty to take cardiograms, Dr. Harris had refused to do so unless permitted also to make a clinical examination of the patient; secondly, that Dr. Harris "could not regard it as an understood condition that his appointment should be permanent, when the letter of appointment laid down expressly that it was subject to annual confirmation." A statement was made on behalf of the committee of the Northern Hospital indicating that no suggestion whatever was being made against the capacity, ability, and integrity of Dr. Harris, who had done great and

valuable work for the hospital, which was cordially appreciated by the committee. They also appreciated that the doctor's grievance really was that his case had not been inquired into, though in their view it had been fully and anxiously investigated.

Diseases of Animals Acts: Ignorance of the Law.

The difficulty sometimes experienced by the public in finding out the law was illustrated by some cases under the Diseases of Animals Acts reported in the *Times* during October. An Isle of Wight farmer was summoned for breaking an Importation of Animals Act Regulation by failing to isolate for six days a pedigree bull brought from the Channel Islands. The clerk of the justices protested that he himself and others who had studied the law all their lives were not informed of such Regulations but had to go and look at the notices posted up. These Regulations came in such masses, he said, that those concerned could not make themselves acquainted with them fast enough. The chairman of the magistrates remarked that it was very necessary that the Regulations should be observed and he fined the farmer 10*s.* as a warning to others. Later in the month another farmer was summoned at the Highgate police-court for failing to give notice with all practical speed of the existence of foot-and-mouth disease on his farm at Whetstone. The farmer said he had no knowledge of the disease; he thought his cows were lame from standing in tarred water which had flowed from the road on to his field. He was fined £25, with a suggestion from the bench that there should be no deduction from the compensation to be paid him for the cows. The outbreak was said to be due to the presence on the farm of straw used for packing bananas imported from the Canary Islands. A greengrocer who had removed the straw from his premises in Finchley to the farm at Whetstone was summoned for breach of the Minister of Agriculture's Order in this respect. The defendant pleaded ignorance of the Order; the magistrate admitted that he himself was unaware of it. The defendant was fined 5*s.*, the prosecution being treated as having been instituted for the sake of giving publicity to the Order. Critics of the Ministry of Agriculture's Regulations and Orders, which admittedly are issued suddenly and in large numbers whenever outbreaks of cattle disease are reported, must remember that it is essential that the Ministry should make swift use of its powers of issuing Orders. The Ministry, as a matter of fact, sets other departments a good example in the efforts it makes to acquaint all concerned. If farmers want to eliminate cattle disease, they must display the necessary interest and vigilance.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Cardiac Hormone.

Prof. Ludwig Haberlandt has recently given the Vienna Medical Society an interesting account of some experiments on the heart which, he claims, have established the existence of a cardiac hormone. The fact that in certain animals (e.g., frogs) the heart continues to beat automatically for some time after removal from the body has not hitherto been satisfactorily explained. Work on the subject has been done by Engelmann, who suggested that the heart-muscle itself must produce substances which regulate and stimulate contraction, but was unable to demonstrate them, and by Löwi who succeeded in isolating from the heart a substance which had some action on the muscle itself. In his own experiments Prof. Haberlandt placed hearts, freshly taken from frogs, in warm saline solution, where they continued to beat for some time. He then removed part of the sinus and placed it also in salt solution, where it beat in the same way. Here he discovered the remarkable fact that the beating fragment imparted its property to the solution. Hearts which had been removed up to three days previously and were apparently quite dead were found to recover on being put in the solution in which the sinus had been beating. They began to beat again. In other words, the fragment of the heart had given off into the saline solution a substance which irritated and resuscitated apparently paralysed heart-muscle. Numerous control experiments, it is said, have established the fact that in the cardiac sinus, as well as in the floor of the ventricle, a hormone is formed that is the cause of the cardiac contractions. It produces these contractions in non-beating hearts; it increases the rate of those which are slowly beating; it strengthens the force of cardiac movement. Prof. Haberlandt calls this hormone "sinus hormone." It is soluble in physiological saline and alcohol, but insoluble in ether, and it is very resistant to heat and cold. This shows that it is not an albuminoid body. It is not identical with adrenalin, for it does not contract the blood-vessels, its action being rather to dilate them. Prof. Haberlandt hopes that he will shortly find a practical method of obtaining the hormone from the hearts of slaughtered animals in quantities sufficient for its therapeutic use in medicine. As was pointed out in the discussion following his demonstration, the isolated hormone would be the physiological cardiotonic in a large variety of pathological conditions.

A New Fattening Cure.

At the same meeting Dr. F. Depisch showed several patients whose weight, by a simple method, has been rapidly increased after debilitating conditions. It is similar to the method of Falta, who injected insulin in order to increase appetite, but in this new treatment the insulin of the patient's own body is, so to speak, mobilised. In a non-diabetic person a dose of 100 g. of glucose, dissolved in 1000 c.cm. of water, is followed by a remarkable drop of the blood-sugar after an initial rise. Three to four hours after the ingestion of the glucose the drop is at its lowest, the blood-sugar falling below its initial value. The rapidity and amount of the drop is an index of the irritability and activity of the tissues producing insulin. Normal patients show at this period a pronounced hunger, and even distinct symptoms of hypoglycæmia, such as tremor, perspiration, and palpitation. Dr. Depisch finds that people with poor appetite and low weight, when given a sugar breakfast as described above, develop the hunger of a wolf, and are able to take a surprising amount of ordinary food about four hours after the ingestion of their sugar. Ordinary sugar is given instead of glucose and it is dissolved in weak tea with lemon. The increased hunger is due to an excessive production of insulin, stimulated by the large dose of sugar. In some instances the increase of hunger does not appear before the third or fourth day of the experiment—i.e., not until the organ has been trained to overwork. The increased output of insulin and the improved appetite continue for some time after the sugar breakfast has been stopped, and the patients thus easily and rapidly gain in weight. In certain patients the method is not successful; some of them refuse to take the large quantities of sugar, and in others the insulin-producing tissues are incapable of an adequate response, so that no hypoglycæmia occurs. Dr. Depisch regards as unsuitable for the treatment those cases with pyrexia, toxic conditions, or gastric irritations. His experiments go some way towards justifying the opinion of those who believe that the ingestion of carbohydrate in diabetes sometimes improves the activity of the insular organ.

The Treatment of Quinsy.

The very frequent occurrence of peritonsillar abscess as a complication in the present epidemic of "influenza" has prompted the Vienna Medical College to devote a meeting to the subject, at which Prof. O. Mayer and Prof. O. Hirsch laid down the following lines of treatment. The site of the abscess decides the method of attack. Those which originate from the upper pole of the tonsil, making the anterior

pillar bulge forward, should be opened at the mid-point of a line drawn from the base of the uvula to the last molar tooth. The incision should be at least three-quarters of an inch deep, for the mucous membrane is very œdematous, and should reach about half an inch outside and below the line mentioned. Once or twice a day the wound should be opened a little with the forceps to let the pus escape, but no other drainage is required. Care must be taken in lancing the abscess not to go too far outwards—this endangers large arteries—nor to go into the tonsil itself, nor to risk damage to the tonsillar artery by going too far inwards. Where there is severe hæmorrhage from such arteries tonsillectomy should be performed at once. Abscesses having their origin at the lower pole of the tonsil generally develop laterally or backwards. Backward extension causes bulging of the posterior pillar, and the abscess can be opened there, whilst lateral extension of the inflammation produces very severe symptoms—pain, impossibility of swallowing, œdema of the tonsillar region, and fixation of the lower jaw. The abscess should be opened as soon as possible at the point of incision described above. If no pus is found there tonsillectomy is indicated, for otherwise there is a risk of a dangerous deep phlegmon of the neck or mediastinitis. If tonsillectomy is impossible or if it is already too late an incision should be made along the anterior border of the sternomastoid muscle, going down to the fascia ensheathing the great blood-vessels, for this is the route along which the abscess goes to the mediastinum. Sufficient drainage is very important after opening the abscess here. Hæmorrhage, even of a minor degree, where there is a peritonsillar abscess, should raise a suspicion that there has been erosion of a blood-vessel; compression or even ligature of the carotid artery (external or common) may be needed. In lancing a quinsy ethyl chloride or ether may be given as an anæsthetic; local anæsthesia is of no use. If abscess-formation is certain it is a mistake to open too early, for if the incision is made before the abscess has truly formed the patient suffers more than before.

Fewer Medical Students.

The entries for the winter term at the University show a distinct drop in the number of medical students matriculating, as well as a general decrease of undergraduates. This is due partly to the unfortunate economic situation of the medical profession, and partly to the fact that many students from Eastern countries (Poland, Roumania, Serbia, Greece) are going to other universities, where there is no restriction placed on their dissection work and where the laboratories and other institutes offer them free experience. First-year foreign students especially are apt to find difficulties in their studies here.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the committee 58 cases were considered, and £784 9*s*. voted to 52 applicants. The following is a summary of some of the cases relieved :—

Widow, aged 59, of M.D. 1889 who practised in Lancashire and died in 1914. Three children. One son, aged 26, has been in a mental hospital since July, 1925. Youngest daughter, aged 22, is a probationer in a hospital, and the applicant is dependent on eldest, aged 23, who earns £2 a week as a clerk. Up to three years ago applicant maintained herself. Voted £26 in 12 monthly instalments.

M.D. Glasg. 1886, aged 68 who practised in Scotland and retired on account of ill-health and deafness. Widower. Four children. Now lives with son, who is a minister with a small stipend. Daughter only earns £75 a year as a secretary. Asks for a grant to enable him to contribute towards his own board and of his personal attendant. Voted £40 in 12 monthly instalments.

Wife, aged 55, of L.S.A. 1900 who practised in the south, and owing to general paralysis is now in hospital. Applicant's five step-children and her own daughter have allowed her about £40 since January. Rent £9 12*s*. Asks for cost of husband's maintenance. Voted £30 in 6 monthly instalments.

Widow, aged 58, of L.R.C.P.I. 1898 who practised in Kent and died in 1904. Only income is rent from a house £65 per annum net. Has one room at a cost of £31 4*s*. including coal. No children. Insufficient income to cover necessities and clothing. Voted £10 in 2 instalments and clothing.

Subscriptions may be sent to the Treasurer, Sir Charters Symonds, K.B.E., 11, Chandos-street, Cavendish-square, W.1.

Public Health Services.

HOME TREATMENT OF MILD SCARLATINA.

A SHORT while ago we announced a change of policy in the allocation of fever beds at the hospitals of the Metropolitan Asylums Board, the effect of which will be to make the home conditions the ruling factor in the decision so soon as 75 per cent. of the available hospital beds are occupied. The borough medical officer of health will then select at his discretion from the notified cases of scarlatina or measles such as are likely to benefit most from hospital treatment The decision was taken on a report as yet unpublished presented to the Board on Feb. 20th last by Dr. F. Foord Caiger, who considered that the only valid objections which could be urged against giving preferential treatment to measles over scarlet fever were, first, that many employers, and most school authorities, declined to allow their employees to come to work or, in the case of children, to attend school, so long as a case of scarlet fever was present in the home. This he felt to be undoubtedly a difficulty, and one which has to be faced. In the better-class homes, where the patient can be isolated, there is not much risk of infection being conveyed by a contact, particularly if an adult, so long as care is exercised in respect of such matters as wearing an overall, washing of hands, and the adoption of ordinary precautions. A leaflet might, he thought, be furnished by the medical officer of health, and delivered at the house by the sanitary inspector on his first visit setting forth the precautions to be observed and, if satisfied that such were being taken, a certificate to that effect might be given by the medical attendant, to be handed by the parent or other person concerned to the employer. Some employers would, no doubt, be unwilling to accept this assurance, but others would, and their number might be expected to increase as the practice became more extended. Cases where the home conditions were such as to preclude the possibility of isolating the patient, or where a confinement was expected in the household, as also those occurring in tenement houses or institutions, would need special consideration and would justify selection for removal to hospital, as in the case of measles under the present system.

Secondly, it is obvious that, should the number of beds allocated to scarlet fever be insufficient for the isolation of all cases for which removal to hospital were sought, a selection of the cases regarded as suitable for admission would have to be undertaken, and this, it had been urged, would be attended with considerable difficulty. The fact that the public and many medical practitioners, relying on past experience, have come to expect the removal to hospital of every case of scarlet fever on application being made, and that a policy of selection is consequently inadmissible is, however, in Dr. Caiger's opinion, an objection to which but little weight should be attached. New conditions call for new measures, and public opinion would have to be educated accordingly. Selection in the case of scarlet fever should not, he concludes, present the same difficulties as in the case of a disease like measles, where the proportion of cases for which hospital treatment can be provided, compared with the total number of cases for which it is required is so much smaller, and where, owing to the average severity of the disease in the early stage being so much greater, removal to hospital at the earliest possible moment is indicated.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED OCT. 23RD, 1926.

Notifications.—The following cases of infectious disease were notified during the week :—Small-pox, 126 (last week 132); scarlet fever, 1863; diphtheria, 1150; enteric fever, 60; pneumonia, 763; puerperal fever, 36; puerperal pyrexia, 115; cerebro-spinal fever, 6; acute poliomyelitis, 68; acute polio-encephalitis, 21; encephalitis lethargica, 37; dysentery, 10; ophthalmia neonatorum, 141. There were no cases of cholera, plague, or typhus fever notified

during the week. One case of small-pox was reported from Islington, the remainder from the northern counties. The reported cases of poliomyelitis and polio-encephalitis are still on the increase, the counties reporting more than 3 of the 2 diseases taken together being Kent, 37 (33 from Broadstairs, 2 from Ramsgate, 1 each from the rural districts of Bridge and Milton); Lancaster, 4; Rutland, 5 (Oakham); Warwick, 7; Leicester, 4 (rural districts of Hinckley and Melton Mowbray). Several counties reported isolated cases of polio-encephalitis without poliomyelitis.

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox, 1 (0) from enteric fever, 6 (0) from measles, 5 (2) from scarlet fever, 19 (5) from whooping cough, 40 (13) from diphtheria, 159 (33) from diarrhœa and enteritis under 2 years, and 54 (18) from influenza. The figures in parentheses are those for London itself.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are some of the statistics of four county boroughs for 1925 :—

Name of county borough.	Estimated mid-year population (R.-G.).	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.	
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Heart disease.	Infant mortality.	Maternal mort. from childbirth.
Leeds	472,900	17·3	12·8	1·27	1·28	2·7	1·4	91	5·5
Birkenhead ..	155,500	20·5	12·1	1·01	1·28	2·6	0·9	92	4·7
Blackburn ..	126,900	14·9	13·9	0·87	1·26	3·3	1·7	98	5·7
Northampton.	93,780	15·6	11·9	1·04	1·49	1·9	1·3	67	6·1

Leeds.

Dr. J. Johnstone Jervis expresses his regret that at the end of five years the tuberculosis scheme is still incomplete. Nearly 200 persons, many of whom are insured, are on the waiting-list for the sanatorium. Either available beds at existing institutions must be increased or an entirely new sanatorium built. The latter, though costing more, is the better proposition. A system of open-air schools is also needed for children of the delicate or pre-tuberculous type. Another matter demanding attention is a comprehensive scheme for dealing with cripples, for which the education and health committees must coöperate. The amalgamation of the public medical services carried on by the two committees has also not yet been consummated.

The Leeds maternity hospital has accommodation for 75 women. It is proposed to increase the beds to 102, and to make great improvements in the administrative facilities. During the year 63 of the pupil midwives trained there entered for the C.M.B. examination and 59 obtained the certificate. The hospital also maintains, by agreement with the corporation, five district midwives, who work under the supervision of the resident medical staff. During 1925 the total births attended through this institution numbered 2355, 844 of which were extern cases. In addition to this about 100 maternity cases were admitted to the beds subsidised by the corporation in Poor-law infirmaries. The total births in the city numbered 8180.

The question of smoke abatement has received attention. The percentage of chimneys emitting more than three minutes per hour of dense smoke was 2·1, as compared with 1·7 in 1924 and 3·3 in 1923. These three years show a great improvement on the records for 1922 and 1921, which were 7·1 and 8·6 respectively. Circular letters were sent to the owners of offices, warehouses, shops, and hotels, asking them to consider the abandonment of raw coal and the adoption of smokeless methods. The West Riding Regional Smoke Abatement Committee has produced a report containing important recommendations to its constituent authorities and to the Government. The recommendations include more systematic observation of chimneys and the adoption of a black smoke limit not exceeding two minutes in the half hour; also a reduction in the price of electricity and the adoption of smokeless methods in new houses wherever possible.

More interest has been taken in the clean milk question. At the end of 1924 the daily sale of graded milk in the city was only 30 gallons. At the end of 1925 the amount had increased to 850 gallons, including 30 gallons of "Certified," 100 of "Grade A (T.-T.)," and 720 of "Grade A" milk. A year or two ago a system of score cards was adopted for the dairy farmers, each farmer being informed of the result. Following this, on Jan. 1st, 1925, a "clean" milk competition, using these score cards, was launched and continued for the whole year. The routine included visits by the veterinary inspector and the cowsheds inspector, who saw the cows milked, &c. The samples taken were tested for visible dirt, keeping properties, the total number of bacteria, and the presence of *Bacillus coli*. 125 of the 130 dairy farms in the city and two outside farms took part in the competition. Thirty of the city farms were found to be producing milk of "Grade A" standard. It is proposed to award first-class certificates to producers obtaining over 75 per cent. total marks, and second-class certificates to those who obtain between 60 and 75 per cent. Only five of the competitors failed to qualify for any certificate. The two corporation farms, which supply "Grade A" milk to the municipal institutions, obtained 90 per cent. of marks. Of the 2039 cows in the city, six were found to have tuberculosis of the udder and five generalised tuberculosis; 9·8 per cent. of the cows were reported to be dirty at the time of the inspection.

Mussels from Millom in Cumberland were found on examination to be sewage tainted and have been excluded from sale. Two small special outbreaks of scarlet fever occurred. One affected 26 persons working at a ready-made clothing factory and arose from a missed case in the person of one of the factory hands. The other outbreak was traced to a milk-supply outside the city. A campaign has been in progress to equip a cancer research laboratory at the university and £75,000 have been already raised for the purpose. In 1924 the corporation agreed to pay the fees of obstetrical consultants called in by general practitioners, but up to now this scheme has only been used 12 times, at a cost of £42 17*s.* 6*d.*

"Housing is still the most serious and urgent of the social problems," although there is renewed activity amongst private house-builders. Of the 960 houses erected by private enterprise, 583 were subsidy houses. Experiments are being made with all-gas and all-electric houses. Dr. Jervis regrets that the house shortage has made progress with schemes for unhealthy areas impossible.

Birkenhead.

Dr. D. Morley Matthieson enumerates several advances in his 1920–25 survey. Thus motor ambulances have replaced horse-drawn; electric light has been installed at the fever hospital; the sanatoriums at Thingwall (now used chiefly for children) and Burntwood (Joint Cheshire) have come into use; the health services have been coördinated with the dual advantage of making the work more interesting to the staff and of allowing the services to be extended without increase of staff. The great lack, however, is suitable central premises instead of the five separate buildings, "mostly inconvenient and unsuitable," at present in use. The corporation subsidise 12 beds for surgical tuberculosis at Leasowe. The children who were discharged after an adequate course of treatment during the years 1920–25 numbered 42, and investigation at the end of 1925 gave the following results :—

Thirty-six cases (including 25 "bones and joints," 5 "abdomen," and 6 "peripheral glands") were cured. In 4 cases (2 bones and joints and 2 peripheral glands) the

disease was not arrested, and in 2 cases (bones and joints) death had occurred.

Up to the autumn of 1922 the V.D. clinic at the borough hospital was conducted by the hospital staff, but since that date it has been carried on by the medical staff of the health department. Every year improvement in methods of diagnosis and treatment have been made and close association kept up with other branches of the public health work. Thus Dr. Mary Deacon, who is in charge of the antenatal clinic, also conducts the sessions at the V.D. clinic at which women and children are treated, and school-children with the later manifestations of congenital syphilis are referred from the school clinics. The most prominent feature of the mental deficiency scheme is the failure to obtain sufficient accommodation in existing institutions for persons who cannot be properly cared for at home. The primary duty of ascertainment has been well carried out in Birkenhead, says Dr. Mathieson, "but ascertainment and classification are of little value unless they are followed by suitable care and control, and, where necessary, segregation." And he goes on to relate the steps which have been taken since early in 1924 and culminated at the close of 1925 by an agreement between the Cheshire County Council and the county borough councils of Birkenhead, Chester, and Wallasey to form a joint committee under the Mental Deficiency Act, 1913, for the purpose of providing an institution to accommodate 500 mental defectives. It is considered that a site near Chester or in the Wirral will be the most convenient.

The antenatal clinic conducted by Dr. Deacon shows a gradual increase of work. During 1925 48 women attended in their first pregnancy and 271 in a subsequent pregnancy. Dr. Deacon is conducting an investigation into the chemical composition of the milk of nursing mothers, which is not yet completed. When the dental scheme for the school-children was put into operation in 1921 it was intended to extend it until it covered the whole school population. Owing to financial reasons no extension has yet been made, with the result that while 6000 of the 24,000 school-children "have in the main clean mouths and sound teeth," 90 per cent. of the remainder have teeth requiring attention, and "large numbers suffer from untreated oral sepsis." Owing to an unusually large number of diphtheria admissions to the hospital and the occurrence of several cases among the staff and of cross-infection in the scarlet fever wards, the "Schick" test was adopted for the staff and for cases of scarlet fever admitted.

Blackburn.

Dr. Oscar M. Holden, who took up his duties in the middle of the year under review, points out that the population of Blackburn reached its zenith in the first decade of the century. At the Census of 1911 it was 133,052 and at the 1921 Census it had dropped to 126,643. The local Census taken on March 14th, 1926, gave a population of 126,497. With this declining or stationary population it is not surprising to learn from the report that housing and overcrowding are less urgent problems than elsewhere. Nevertheless, there is a considerable waiting-list for corporation houses. The problem of houses let in lodgings remains unsolved and there is a growing evil of caravan dwellings. Dr. Holden deplores the fact that the by-laws in force for the former do not give powers to the corporation to enforce annual registration and better cooking facilities. The rents charged are generally exorbitant, and the accommodation, furniture, and bedding very unsatisfactory. There is a growing tendency to use caravans as a substitute for houses. A business is made of buying caravans, placing them on vacant ground, and letting them to tenants at 5*s.* to 10*s.* a week. Frequently there is no proper water-supply or closet accommodation and the ground around the caravans becomes littered with refuse. But the actual inmates are reported to be "particularly healthy."

The respiratory group of diseases bulks largely in the death returns and Dr. Holden thinks climatic conditions coupled with a dirty atmosphere are largely to blame. Tables are given in the report to show the relative cost of heating rooms by various methods. For continuous heating an open fire with low temperature coke comes out well. There are 183 factory chimneys in the town, 100 of which are provided with smoke-consuming appliances; 190 observations were made during the years, and in 39 black smoke was emitted in excessive quantities. The standard adopted in Blackburn varies from four minutes black smoke in the hour for a chimney serving one boiler to seven minutes for a chimney serving four or more boilers.

A high maternal mortality is common to Blackburn and other textile towns. The rate for 1925 was the same as the average for the last nine years—namely, 5·7. The municipal maternity home has accommodation for 20 cases and towards the end of the year the medical officer of health was empowered to remit the minimum fee of 1½ guineas per week in cases of proved necessity. An antenatal clinic was begun in 1921 and is conducted by the assistant medical officer, Dr. Ella Mackenzie. The expectant mothers who attended during 1925 numbered 367. The total births were 1902. Of the total births 285 took place in institutions, 53 in midwives' houses, and of the confinements in private houses 37·1 per cent. took place in the kitchen or living-room. There were 74 still-births, equivalent to 3·9 per cent. of the registered live births, and the certified causes were as follows: 19 mal-presentations, 12 albuminuria, 3 ante-partum hæmorrhage, 2 difficult labour with instrumental delivery, 12 ill-health of mother, 1 malformation of fœtus, 2 of fall, and 23 not known. Ophthalmia neonatorum has not caused blindness in Blackburn for four years. Wet milk is not supplied through the centres, as it is found that when dried milk is supplied the babies are brought regularly to be weighed and examined. The fourth clean milk competition was held from January to March, 1925. There were only five entrants, however, and there are 68 inside and 95 outside dairy farms which retail milk in the borough. Of 94 samples of mixed milk examined at Liverpool University for tubercle, three gave a positive result and in eight cases the experimental animal died before the test was complete. One of the positive cases came from an outside farm which supplied "Certified" milk. The two other positive samples also came from outside farms, but in neither case was a tuberculous udder found. At one farm a cow had been sold, but at the other nothing was found to account for the infection of the milk.

The accommodation for tuberculous patients at corporation hospitals is to be improved by the provision of wide verandahs. Apart from the window-cleaning business managed by the Charity Organisation Society for ex-sanatorium patients, there is no system of after-care, and there is, says Dr. Holden, great need for it.

Northampton.

Dr. J. Doig McCrindle criticises the scavenging arrangements in his borough. One of the tips caused an intolerable smell in the neighbouring streets during the hot weather and a plague of flies. Owing to the utterly unsuitable receptacles for house refuse put out on the street and to the uncovered carts used, the condition of the streets on a dry windy day is a frequent source of complaint. Industrial smoke does not cause much pollution of the atmosphere in Northampton as the power in the factories is mostly supplied by gas or electricity.

Milk adulteration is apparently profitable in Northampton. In one case of 9·6 per cent. of added water a fine of 16*s.* with 4*s.* costs was inflicted. In another case a retailer was supplying milk 37 per cent. deficient in fat and with 14·1 per cent. of added water. On sampling the milk in course of delivery to the retailer the dairy farmers' product was found

to be 9 per cent. deficient in milk-fat and to have 13·3 per cent. of added water in one sample and 15·4 per cent. in another. The time-honoured defence of a leaky cooler was put in and a fine of £4 15*s.* with 5*s.* costs was inflicted. After being free from small-pox for 20 years Northampton had an outbreak of the mild type. There were 23 cases with no deaths. The revision of the register of notified consumptives has resulted in the removal of 75 persons as being cured and of 113 persons in the case of whom the diagnosis was not established.

SCHOOL MEDICAL SERVICE.

Name of town.	No. on roll.	Av. elem. school attendance.	No. of routine children examined.	No. of special examinations and re-inspections.	Percentage of children found on routine examination requiring treatment.*
Carlisle	7895	6858	2819	7628	27·0
Tunbridge Wells	—†	3185	1185	2928	29·6
Torquay	3669	3123	1086	6180	18·1

* Excluding uncleanliness and dental defects.
† Not given.

Carlisle.

Dr. Joseph Beard draws attention to the invaluable aid given to the local authority by the Carlisle Council of Social Service which provides treatment for many ailing children at the convalescent institution at Silloth and sends others to recuperate at various homes; the council is now arranging to provide treatment for cripples in conjunction with the surgical staff of the Cumberland Infirmary. This help is doubly welcome, since there are at present no facilities in the city for dealing with either physically or mentally defective children. Open-air education is provided for 60 debilitated children at Newtown, where they are visited weekly by the tuberculosis officer, and each child in attendance is supplied with two meals a day. The excellent practice of supplying necessitous children with meals cooked at the domestic centres is in vogue. The council's scheme includes ophthalmic treatment and X ray exposures for various skin complaints as well as minor ailment and dental treatment. Operations for tonsils and adenoids and presumably for ear disease are carried out at the infirmary. Statistical tables show that there has been no diminution in verminous conditions of the head during the past few years. The attendance of parents at routine medical examinations is small (51·3 per cent.), but shows an increase from 48·4 per cent. in 1924.

Tunbridge Wells.

Dr. F. C. Linton points out the unsuitability of many of the present school buildings which are badly designed and unhygienic, with insufficient lighting and inadequate and unheated cloakrooms. Children arriving with wet clothing and feet have no means of drying them. There is little or no circulation of fresh air and sunlight is excluded. Playground accommodation is inadequate and the play instinct which determines growth and development is stifled, and since there is no director of physical exercises, games are played in haphazard fashion. Of course, these conditions are not peculiar to Tunbridge Wells, but they are specially noticeable in a health resort. Dr. Linton has good reason for his belief that such conditions are important factors in keeping up the incidence of enlarged tonsils and adenoids as well as much catarrhal and general affections. The coördination of the various health services in the town is good and the school medical officer supervises the debilitated children under school age. The success of a small, privately-run venture has encouraged the education authority to arrange for an open-air school on more ambitious lines and an orthopædic scheme is now coming into operation, while a beginning has been made to provide suitable education for the feeble-minded by conveying ten cases to the special school run by the Kent educational authority in Tonbridge.

Torquay.

Dr. T. Dunlop includes in his report the findings of Dr. J. V. A. Simpson with briefer notes by the oculist and dentist. Dr. Simpson has carried out an investigation on the relationship of rowing and physical fitness. Torquay is the first authority to apply for the permission of the Board of Education for elementary school-boys to take rowing as a part of their physical education. The estimates of fitness were based on Dr. A. G. Woolham's modifications of Flack's breathing tests, and the results were compared with the relative fitness of various types, including some weakly lads from an open-air school. The most valuable single method was the "persistence test"—i.e., the time a column of mercury could be held at a certain level by blowing into a standard tube, the pulse-rate being taken every five seconds. Such investigations are valuable as a foundation for finding tests of physical fitness comparable with the Binet-Simon tests for intelligence. Dr. Simpson also continues his comprehensive records of ventilation, tested by the kata-thermometer. It is expected that the open-air school will materially benefit cases of rheumatic heart affections. An unusual experiment was recently carried out at this school by entertaining a party from a London myope class. Dr. D. Wilson, the ophthalmic surgeon, remarks on the increasing attention paid in Torquay to fusion-training in squint and to the care of glasses. Only one-seventh of the dentist's time is taken up by inspection, the remainder being devoted to treatment, in which the main consideration is the preservation of the permanent teeth. This report contains much of scientific and practical interest.

Obituary.

THOMAS CHURTON, M.D. ABERD., M.R.C.S. ENG.

THE death of Dr. Churton at the advanced age of 87 will come as a real sorrow to a large circle of professional and lay friends, as well as to the general public of Leeds. Born at Stafford, he was educated at Shrewsbury and afterwards became a student of the Leeds School of Medicine. His mother, who was left a widow shortly after his birth, became matron of the old infirmary at Leeds and, like her own mother, who had been matron at the Salop Infirmary in Shropshire, did good work in that capacity. Young Churton became one of the junior residents at the infirmary, and in 1862 took the diploma of the Royal College of Surgeons. For a good many years he was in general practice at Erith, but he always aimed at consulting practice and for this he prepared himself by making regular visits to London several times each week and attending the practice of Guy's Hospital and other teaching centres. He then threw up his general practice and went for a year's intensive study to Aberdeen University where, under the conditions then in force, he graduated as M.B. in 1876 and M.D. in 1877. In after years, Dr. Churton often spoke of the pleasures of this time at Aberdeen and of the kindness which he received from everyone at the University and infirmary. In 1879 he was elected honorary physician to the General Infirmary at Leeds, becoming colleague to Dr. Clifford Allbutt—as he then was—and to Dr. J. E. Eddison. He remained a member of the full staff till 1919, and during all that time was one of the most assiduous of honorary officers, devoting himself heart and soul to the welfare of the patients entrusted to his care. He was lecturer on medicine to the Yorkshire College when that College was a constituent part of the Victoria University, and was also on the staff of the old Leeds House of Recovery, which was one of the early fever hospitals of this country,

having been founded in the year 1801. He did a great deal of work among the labouring classes when he was on the honorary staff of the Leeds Public Dispensary, and he was consulting physician to the Batley Cottage Hospital.

The Leeds and West Riding Medico-Chirurgical Society was started in 1872 and Dr. Churton became a member in 1876; he acted as secretary from 1878 to 1884 and occupied the presidential chair in 1890. His regular attendance, not only during the earlier years of his connexion with the society, but for many years after he had passed the chair, was an example and a stimulus, and the society paid him the highest compliment in its power by electing him an honorary life member on his retiring from active practice. To the work of the society he brought his best in the way of papers and in the exhibition of cases, and his rising to take part in any discussion was always welcomed by the members, who were captivated by the charm of his voice, by his humour, and by the sincerity and earnestness which he always showed on these occasions. He did not publish much, but whatever he wrote was notable for its thoroughness.

The memory of Dr. Churton will long be preserved by his colleagues of the medical profession in Leeds as that of a high-minded man, conscientious in his work, and free from any trace of self-seeking.

CUTHBERT BALFOUR PAUL, M.B., F.R.C.S. EDIN.

WE have to record the death of Mr. C. B. Paul, of Carlisle, surgeon to the Cumberland Infirmary. At the beginning of last month, whilst making a tour of Dutch hospitals with a party of English surgeons, Mr. Paul contracted erysipelas, and on Oct. 25th he died of septicæmia at Amsterdam, being then 49 years of age.

Cuthbert Balfour Paul was the son of Sir James Balfour Paul, for many years Lyon King at Arms. He was educated at the Edinburgh Academy, which he represented at both cricket and football, and he graduated in medicine at Edinburgh University in 1900. After holding house appointments at the Royal Infirmary and the Edinburgh Hospital for Sick Children, he became private assistant to Sir Harold (then Mr.) Stiles and worked with him in that capacity for six years. In 1903 he took the diploma of F.R.C.S. Edin. and in the following year was elected assistant surgeon to the Chalmers Hospital, Edinburgh, a post which he held until 1908, when he accepted a similar appointment at the Hospital for Sick Children. Here he stayed until 1912 in sole charge of the surgical out-patient department, though the work was briefly interrupted to enable him to spend a short time in Germany and assist Sir Harold Stiles to translate into English the fifth German edition of Kocher's "Text-book of Operative Surgery." In April, 1912, Mr. Paul left Edinburgh and accepting the appointment of assistant surgeon to the Cumberland Infirmary, soon built up a large practice in the Carlisle district. On the outbreak of war in 1914 he offered himself unconditionally for service at the front, but his offer was not accepted and he was posted in England with a Territorial division until, at the urgent request of the infirmary committee, the War Office released him to carry on his work at the Cumberland Infirmary. When a Red Cross Hospital was established at Murrell Hill House he accepted the post of visiting surgeon, and during the remainder of the war did much valuable work there and elsewhere. Mr. Paul took the keenest possible interest in the Cumberland Infirmary and always served it loyally; his considerable abilities inspired great confidence in his patients. Two years ago, as there was no vacancy, the statutes of the infirmary were amended so that he might be appointed full surgeon—a compliment which he obviously deserved. A sociable and generous man, fond of sport and music, he was always ready to take part in the social activities of the district, where so sudden an end to his life will be widely regretted. The funeral service in Carlisle Cathedral on Oct. 29th was attended by a very large number of people.

DAVID LLOYD, J.P., M.B., C.M. GLASG.

Dr. David Lloyd, who died on Oct. 23rd in his sixty-second year, was born at Ty Mawr, near Ruthin, and educated at Ruthin Grammar School. He began his medical studies at the Middlesex Hospital and afterwards proceeded to the University of Glasgow, where he graduated in 1891. His first experience of practice was gained in a populous part of South Wales, after which, in 1892, he settled in Denbigh, where he remained until his death. During this residence in the town Dr. Lloyd held every post of honour and most of the local appointments. He was mayor of Denbigh for two years (1903 and 1904), a justice for the town and county, and a member of the county council, on which he served for a time as alderman. For many years he represented the county council on the board of governors of the North Wales Counties Lunatic Asylum; he was medical officer of health for Denbigh and medical officer to the famous Howells' School there. "Dr. Lloyd," writes a colleague, "was always a student and was most anxious to be up to date. He found time to take post-graduate classes in Liverpool University and paid weekly visits to the Liverpool hospitals for special study. There can be no doubt that his death, at a comparatively early age, was due to his fondness of his professional work and not taking a sufficiently serious view of his own health, as pointed out to him by his medical advisers. His death will be keenly felt by a very large number of friends and patients throughout North Wales." Dr. Lloyd leaves a widow, but no family.

WILLIAM HENRY WHITE, M.D. DUB., M.R.C.P. LOND.

Dr. William Henry White, whose death occurred suddenly on Oct. 22nd, was born at Wexford in 1849, and graduated at Trinity College, Dublin, in arts and medicine. He came to England and settled in practice at Westbury, Shropshire, but found that the work of a large general practice was unsuited to his health. After a necessary rest he decided on a London practice, obtained the M.R.C.P. Lond., and for the rest of his life resided in Weymouth-street, where he practised for 45 years and where he was seeing patients up to the day of his death. Here he acquired, almost from the start, a large number of patients. Very definite in diagnosis, perhaps somewhat dogmatic, his treatment was intensely practical; he was quick to discard useless methods, and had a great hold on the reason and regard of his patients, his striking and impressive appearance being of assistance. His personal influence was as great with the poor as with the rich, largely owing to his cheerfulness and genuine kindness, so that patients crowded to his clinics at the hospitals where he was physician—the Royal Hospital for Diseases of the Chest and the St. Marylebone Dispensary. By his personal friends he will ever be remembered for his charm and powers of sympathy.

In these days he seemed of an older fashion. He was a yachtsman and a great lover of horses, bred his own animals, was for many years a familiar rider in the Row, and till only recently was in the habit of driving his own pair of horses on his rounds. The death of his wife in January last, just after the date of their golden wedding, was a grief from which he never recovered. He is survived by one daughter, Mrs. Constance E. Hughes, and one son.

Sir Arnold Lawson writes: "I should like to add my testimony to the loss the profession has sustained by the death of my old friend, Dr. W. H. White. He was one of the kindest-hearted men I have ever met, always ready to help, and always one whose help was valuable. He had an enormous practice and nobody better deserved success of this kind, for he was a good friend as well as a good physician, with the result that his patients were devoted to him. He was a most able clinician with a strain of originality in his treatment and outlook, which often made his opinion in a difficult case most valuable, and which, too, often brought success after others had failed. One of his strong

points was his independence. He was always ready to take his own line, though it might at the time involve disagreement with his colleagues, and, in my experience, which has extended over many years, he was generally right."

FRANK HUGH BARENDT, M.D. LOND., F.R.C.S. ENG.

Dr. F. H. Barendt, who died at Liverpool on Oct. 28th after a short illness, was well known in Rodney-street as a sound and helpful consultant. The son of Mr. J. E. Barendt, he was educated at Liverpool College and Danzig, and later at the University of Liverpool, where he distinguished himself as a student. In 1885 he qualified for medical practice and two years later graduated as M.B. Lond. The next few years were spent in post-graduate study at Vienna and in house appointments at the Liverpool Royal Infirmary and elsewhere. In 1890 he became F.R.C.S. Eng. and returned to Liverpool, where he was eventually appointed physician in charge of the skin department at the Royal Southern Hospital and surgeon to St. George's Hospital for Diseases of Skin. These posts he held until his death. Dermatology he made his special study and his contributions to its literature were numerous; in 1913 he was vice-president of the Dermatological Section of the British Medical Association. Though never seeking prominence Dr. Barendt entered heartily into all the medical activities of Liverpool. He held office in turn as librarian, editor of the *Journal*, and vice-president in the Liverpool Medical Institution, and he was a strong supporter of the Medical and Literary Society; there were very few subjects on which he had not something of value to say. His own training had been on classical lines and this very clearly moulded his style of speaking, but he was also master of several modern European languages. "In Dr. Barendt," writes a colleague, "family ties seemed unusually deep and strong. As a friend his sympathies were very wide, and many of the younger members of the profession had good occasion to know it. As a man his conduct was modelled by a very definite sense of duty, although a strain of humour and a kindly disposition prevented unnecessary clashing where his ideas did not coincide with those of his colleagues."

Dr. Barendt leaves a widow and several children. His eldest surviving son is a medical student in London.

ARTHUR WILLIAM SCATLIFF, L.R.C.P. EDIN., D.P.H.

Dr. A. W. Scatliff, who died recently at Ditchling Common, Sussex, was the second son of the late Dr. J. Parr Scatliff, of Sloane-street, London, and a member of a family many of whom have been medical practitioners. He studied medicine at St. George's Hospital, and qualified as L.S.A. Lond. in 1876, soon afterwards acquiring diplomas at the Edinburgh Royal Colleges. He then settled at Margate where, as a man of personal charm and wide sympathy, he soon had a large practice; he also acted as medical officer of health and police surgeon for the town. In 1904, however, after 25 years' work at Margate, he accepted an appointment under the Church Missionary Society and went to China, where he was stationed at the Men's Hospital, Futsing, in the Fuhkien Province. Here he remained until 1912 when he came home on furlough, returning again to China early in 1914. On the outbreak of the late war he offered to go home to fill the place of some younger man, but an attack of typhoid fever made his departure impossible. Experiences in China during nearly 17 years seriously damaged his health, and in 1920 he reluctantly resigned his appointment and went back to England; since then he had been almost an invalid. Dr. Scatliff did valuable work in China, and was instrumental in securing the erection of a large hospital in Fuhkien which served a large area. He was the author of a number of contributions to medical journals on various aspects of public health.

Correspondence.

"Audi alteram partem."

POST-OPERATIVE BURNS.

To the Editor of THE LANCET.

SIR,—Post-operative burns from the application of hot-water bottles to patients just returned to bed have been and are far too frequent. Such burns should never occur. The surgeon or medical man in charge is the person who should be blamed, not the hospital or the nursing home. It is a most extraordinary fact how medical men will always keep on the old lines and are so slow to analyse facts in a commonsense way.

Consider for one moment the condition of a patient who goes through an operation under a general anæsthetic, where possibly a preliminary injection of morphia has been given. There is more or less unconsciousness and shock. The patient is transferred to a bed with sheets—good conductors of heat—and hot bottles are applied. It is impossible for a patient to react to this heat, even though a nurse's hand can bear the heat quite well. Nurses can bear a great deal of heat, as witness the experienced surgeon who is going to wash his hands in hot water. He "dabs" his fingers carefully in first of all before he plunges the whole hand. The greater the shock the less likely is the patient's skin able to react to hot bottles; and heat which would not burn a healthy, conscious person will burn a shocked one.

Once and once only to my knowledge has a burn occurred in my practice—private or hospital—and many thousand patients have passed through my hands. A post-operative patient should be placed between blankets which have been warmed by hot bottles and these bottles removed when the patient is returned to bed. In many places nowadays a cage can be placed over the patient with an electric bulb attached, a blanket intervening between the patient and the bulb.

After seeing several cases of post-operative burns in consultation—in one case burns of the third and fourth degree on the outside of the thighs in a patient who had been operated on for hydrocele; in another burns down to the bone on both heels where there had been a prolonged mastoid operation; and so on—it makes a very deep impression. In many homes the head nurses tell me that the surgeons order plenty of hot bottles to be packed round the patient, and the great dread the nurses responsible have for after-burn. In bad cases hot bottles only add to the shock, and, considering their wide use, it is a surprise to me that there are so few sufferers. Some years ago I heard a case in court where an action was brought against a hospital on account of such a burn, and the case went entirely against the hospital, not because there was gross carelessness, but because the burn had occurred.

There is another word of warning, and that is where pure carbolic acid is used in such operations as curettage. A drop of this in contact with the skin will produce a burn which very conveniently can be attributed to a hot-water bottle.

I am, Sir, yours faithfully,

Edinburgh, Oct. 22nd, 1926. J. W. DOWDEN.

ASHAMED TO BEG.

To the Editor of THE LANCET.

SIR,—I should be grateful if you would allow me to draw attention in THE LANCET to a matter which is at present in a very unsatisfactory state—namely, surgical and medical attention on medical men (and their families) who are unable from their class of practice to send patients to consultants and specialists. One in this position hesitates to take up the time and give trouble (perhaps necessitating a major operation)

without some *quid pro quo* and the result is that complaints are let go on with much disability or till too late to do anything for radical cure. No fee will be taken if offered and even pressed. A present chosen after much thought may not be valued and the consultant is not pleased. I and my wife have wanted for some time to consult someone, but the existing state of affairs has prevented us from doing so. At present, it amounts to this, that medical men in a certain class of practice are the only people who cannot freely get willing necessary skilled attention even if they are prepared to pay. Could not some scale of fees be arranged that would allow medical men to consult specialists and be welcomed and attended to equally as members of the public paying the usual fee?

I assure you this is a serious matter for a large number of us and I earnestly hope that something can be done to solve the difficulty.

I am, Sir, yours faithfully,

Nov. 1st, 1926. MEDICO.

THE PASTEURISATION OF MILK.

To the Editor of THE LANCET.

SIR,—I do not think it will serve any purpose to enter into further discussion. I remain of the conviction that the milk-supply in this country is dangerous. The total amount of satisfactory milk available does not suffice for the supply of a quarter of a million people, even at the ridiculously low rate of consumption of 0·25 pints per head per day; and the price at which this inadequate supply is vended places it out of reach of any but well-to-do families. It is in pasteurisation, and in pasteurisation alone, that we can see in the immediate future a satisfactory milk-supply for the bulk of the people.

I am, Sir, yours faithfully,

Huddersfield, Oct. 28th, 1926. S. G. MOORE.

THE NOMOGRAPHIC METHOD:

AN ERROR OF OMISSION.

To the Editor of THE LANCET.

SIR,—Dr. W. Feldman has drawn attention to the omission of any reference to his name in connexion with the use of the nomograph for Dubois formula on page 98 of my recent work on "The Fundamentals of School Health." This was entirely accidental, and due to elimination of reference to the nomograph as a graphic method, from the chapter on Statistics, merely retaining the figure as of possible use when transferred to that on Nutrition. Amid the thousands of references there was almost bound to be some error of omission or commission, and in this case the reference should have been to THE LANCET, 1922, i., 273.

I am, Sir, yours faithfully,

Colinton, Oct. 27th, 1926. JAMES KERR.

THE LATE DR. W. H. FLEETWOOD.—After some months of failing health Dr. William Hardy Fleetwood died on Oct. 27th at Hadleigh, Suffolk, where he had been in practice since 1919. He studied medicine at the London Hospital, qualified as M.R.C.S. Eng. in 1905, and acted as house surgeon at the West Ham and East London Hospitals, and as resident medical officer at the Mill-road Infirmary, Liverpool. For some time before the war he was in practice at Hoylake, near Liverpool. He saw service for a long period in charge of an advanced hospital on the Salonika front and retired at the end of the war with the rank of major in the Royal Army Medical Corps. After holding an appointment for a time as registrar at the Kitchener Hospital, Brighton, he went to Hadleigh where he took much interest in the affairs of the town, working for the Hadleigh Athletic Association and the local branch of the British Legion and the local lodge of Freemasons. Dr. Fleetwood leaves a widow.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At a Congregation held on Oct. 29th, the following degrees were conferred:—

M.D.—L. B. Cole.

M.B. and B.Ch.—W. W. McLean, R. H. Metcalfe, and A. T. Worthington.

M.B.—J. H. Hannan.

SOCIETY OF APOTHECARIES OF LONDON.—At recent examinations the following candidates have been successful in the undermentioned subjects:—

Surgery.—H. J. Fordham and W. Johnson, St. Mary's Hospital; R. C. Glover, Leeds and St. Bartholomew's Hospital; R. I. Richards, St. Bartholomew's Hospital; and H. Rundstrom, St. George's Hospital.

Medicine.—A. Heukamp, Gottingen and Royal Free Hospital; W. Howard, Liverpool; T. W. Riseley, Cardiff; and W. D. Williams, London Hospital.

Forensic Medicine.—J. R. S. Bowker, Middlesex Hospital; A. Heukamp, Gottingen and Royal Free Hospital; W. E. Ivers, Manchester; S. Jenkinson and R. W. Wood, St. Bartholomew's Hospital; T. W. Riseley, Cardiff; V. K. Samy, Dundee; and W. D. Williams, London Hospital.

Midwifery.—H. M. de Hartog, St. Mary's Hospital; B. D. Jain and E. H. Waller, Charing Cross Hospital; A. W. Marsden, Birmingham; C. E. Nicholas and W. D. Williams, London Hospital; J. Pattis, Innsbruck and University College Hospital; and D. K. Reynolds, King's College Hospital.

The Diploma of the Society has been granted to the following candidates, entitling them to practise medicine surgery, and midwifery: R. C. Glover, A. Heukamp, W. Johnson, C. E. Nicholas, J. Pattis, and R. I. Richards.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—An ordinary quarterly comitia of the College was held on Oct. 28th, the President, Sir John Rose Bradford, being in the chair. The following candidates, having passed the necessary examinations, were admitted as Members of the College:—

Drs. Kenneth Blackie Aikman, Robert Dudley Alexander Henry Cohen, William Robert Fitzgerald Collis, Hector Alfred Colwell, James Gordon Danson, Iforwyn Glyndwr Davies, Dinshaw Hormusji Dudha, Vivian Feldman, George Fletcher, Charles Skinner Hallpike, Geoffrey Edward Roper Hamilton, Philip Montagu D'Arcy Hart, Richard Brunel Hawes, Richmond Jeremy, Edgar Hartley Kettle, John Faulks Landreth, Oscar Carl Moller, Austin Threlfall Nankivell, Charles Edward Newman, Arthur Pool, Arthur Digby Porter, Eric Alfred Blake Pritchard, Edward Scott Sobhi Rizkalla Simaika, Sir Eric Stuart Taylor, Paul Biddulph Wilkinson, and Leslie John Witts.

F. H. Maugham, Esq., K.C., was appointed a Senior Standing Counsel on the nomination of the President, vice A. C. Clauson, Esq., K.C., appointed a Judge in the High Court of Justice.—It was resolved that in 1927 a conversazione should be held at the College in honour of the centenary of the publication of Richard Bright's book the date to be fixed subsequently so as to coincide with the celebration at Guy's Hospital.—On the motion of Dr J. S. Fairbairn it was resolved that the Committee of Management should be asked to report to the College on the efficiency of the Examination in Midwifery and Diseases peculiar to Women in the Final Examination of the Conjoint Board.—Dr. H. L. Tidy was elected a member of the Committee of Management in place of Sir William Hale-White who has resigned after eight and a half years of service. Dr Raymond Crawfurd, who retired in rotation, was re-elected.—Two communications were received from the Home Office. The first stated that a committee on the Poisons and Pharmacy Acts is prepared to hear evidence on matters within the scope of the terms of reference to the committee and asked if the College would wish to lay its views before the committee. The second enclosed copies of amended regulations under the Dangerous Drugs Act, and asked the College to nominate a representative to serve on the tribunal for England and Wales, and also a substitute for such representative in case of his unavoidable absence. Sir. W. Hale-White and Dr. J. Fawcett were appointed.—A photograph of a portrait of Nathaniel Johnston, a former Fellow of the College, together with some biographical notes, was received from Dr. A. J. Hall, of Sheffield. The thanks of the College were voted to Dr. Hall.—A report was received from the Committee of Management recommending that certain universities which were removed in 1918 from the list of recognised places of study, graduates of which are admissible to the Final Examination of the Board, should now be reinstated in the list—namely, Graz, Innsbruck and Vienna; Prague; Berlin, Bonn, Breslau, Erlangen, Freiburg, Giessen, Göttingen, Greifswald, Halle, Heidelberg, Jena, Kiel, Königsberg, Leipzig, Marburg, Munich, Tübingen and Würzburg; Budapest. The Committee also recommended that the University of Hamburg be added to the list of recognised German universities, it having been

ascertained that British doctors are admissible to the Staats Examen in Germany and Austria by recognition of their studies and examinations in Great Britain. The Committee also recommended that the Preston and County of Lancaster Queen Victoria Royal Infirmary be added to the list of hospitals recognised by the Board. The Committee's report was adopted.—A report was received from Dr. Dawtrey Drewitt, the representative of the College on the Committee of Management of the Chelsea Physic Garden.—A report was received from Lord Dawson on his conference with the Medical Research Council in regard to the continuation of the publication of the science abstracts.—Books and other donations presented to the library during the past quarter were received and thanks returned to the donors.—The replica of the portrait of the late Sir Richard Douglas Powell, Bart., a former president of the College, given by the Dowager Lady Powell and by Colonel Sir Douglas Powell, was on view.—After some formal College business, the President dissolved the Comitia.

Licences to practise were conferred upon 185 candidates (including 25 women) who have passed the Final Examination of the Conjoint Board. The following are the names and medical schools of the successful candidates :—

Y. Abdel-Messiah, Middlesex ; A. Ali, Cairo and St. Bart.'s ; G. E. Aling, Calcutta and Guy's ; J. H. Anderson, Dublin and Guy's ; G. F. Andrews, Middlesex ; M. C. Andrews, Cambridge and Univ. Coll. ; H. W. Applin, Guy's ; J. M. Ashton, St. Thomas's ; H. Awrounin, Charing Cross ; L. G. Backhurst, Cambridge and St. Thomas's ; Grace Batten, Oxford and King's Coll. ; Rosie B. Becker, Leeds ; M. Behr, Cape and Middlesex ; Florence K. Bibby, Charing Cross ; G. Bindman, Durham ; G. W. Black, Middlesex ; E. J. C. Bockett, King's Coll. ; E. S. Bolton, Cambridge and Leeds ; Susanna M. Bornman, Cape and Royal Free ; J. W. Bottoms, London ; H. W. Bowen, St. Thomas's ; E. Bowen-Jones, Guy's ; H. Brown, Sheffield; F. W. Bradley, Guy's ; J. G. Brandon-Bravo, Amsterdam and St. Thomas's ; W. A. Briggs, Cambridge and St. Bart.'s ; M. Bryer, St. Bart.'s ; R. H. Burns, Cambridge and London ; Izza Caley, King's Coll. ; C. J. N. Cameron, Univ. Coll. ; S. Carnofsky, Cape and Guy's ; J. C. D. Carothers, St. Thomas's ; W. H. Carr, Leeds ; J. R. B. Chatterton, Univ. Coll. ; J. A. Cholmeley, St. Bart.'s ; S. L. A. Clarke, Guy's ; P. F. Cluver, Oxford and St. Bart.'s ; A. Cohen, London ; W. K. Coombes, Bombay and St. Mary's ; D. H. Couch, Guy's ; H. T. Cox, Cambridge and St. Thomas's ; E. S. Curtiss, St. Bart.'s ; R. P. P. Davies, St. George's ; Winifred M. de Kok, Cape and Royal Free ; A. C. de Sousa, Middlesex ; A. A. Digges la Touche, Cambridge and Leeds ; T. A. J. M. Dodd, Oxford and St. Bart.'s ; J. Dywien, Guy's ; Phyllis M. Edgar, Univ. Coll. ; H. M. Elliott, Cambridge and St.Bart.'s ; E. A. R. Ennion, Cambridge and St. Mary's ; H. K. Evans, Middlesex ; Leonora S. Evans, Royal Free ; S. H. Evans, Sheffield; W. G. Evans, Cardiff ; A. W. Fawcett, Edinburgh ; Dorothy D. Forster, St. Mary's ; A. E. Fraser-Smith, St. Bart.'s ; E. G. Frewer, Cambridge and London ; A. H. Gale, Oxford and Univ. Coll. ; Margaret E. J. Gashion, Charing Cross ; J. B. George, St. Thomas's ; Dorothy Gibbs, Charing Cross ; R. M. Gilchrist, Cambridge and St. Bart.'s ; H. K. Goadby, Cambridge and St. Thomas's ; Marjorie Goldrich, Charing Cross ; J. A. Gornall, Manchester ; J. Gough, Cardiff ; R. A. Graff, Middlesex ; E. C. Grant, New Zealand and St. Mary's ; T. L. Griffiths, Cambridge and St. Bart.'s ; H. L. Gulati, Lahore and Charing Cross ; G. S. Hall, Birmingham ; A. C. de B. Helme, Cambridge and St. Bart.'s ; G. F. Henderson, Univ. Coll. ; G. R. N. Henry, St. Thomas's; V. V. H. Hoakai, Guy's ; O. Hooper, Oxford and London ; H. O. Hopkins, Middlesex ; F. S. Hubbersty, Cambridge and Univ. Coll. ; T. C. Hunt, Oxford and St. Mary's ; C. B. Huss, Cardiff and St. Bart.'s ; A. B. Hyman, Guy's ; R. Illingworth, Oxford and Manchester ; A. J. Johnson, Cambridge and St. Bart.'s ; E. C. Johnson, St. Mary's ; Louise A. Johnson, Birmingham ; C. W. Jones and W. T. Jones, Cardiff ; F. E. Kingston, London ; F. Knoyle, Westminster ; L. C. Lancaster, Cambridge and St. George's ; F. R. Langmaid, Middlesex ; C. J. Laviers, Cambridge and St. Bart.'s ; H. W. Lewis-Philipps, Guy's ; D. G. Lloyd, Cardiff and London ; Flora W. Lloyd, St. Mary's ; G. E. Macdonald, Oxford and London ; J. R. Macdougall, St. Bart.'s ; J. McFadzean, Glasgow and London ; W. H. S. McGregor, St. Bart.'s ; W. McLaren, Durham ; H. E. McLaughlin, St. Bart.'s ; W. N. Maclay, Cambridge and St. George's ; E. H. Madge, Univ. Coll. ; P. C. Mallam, Oxford and St. Mary's ; S. M. Mallick, Lahore and Guy's ; C. Mani, Birmingham ; H. Mannington, Middlesex ; J. N. Martin, M. N. Menon, and R. J. Milbank, Guy's ; Barbara H. Mitchell, Royal Free ; Mary S. Mitchell, St. Mary's ; E. R. W. Mons-Glaser, Basle and Middlesex ; H. W. Morck, Durham and Charing Cross ; E. W. T. Morris, Adelaide and St. Thomas's ; T. W. Morris, Liverpool ; E. F. Morton, Cambridge and Middlesex ; B. E. T. Mosse, Cambridge and St. Bart.'s ; B. G. S. Mudali, Madras ; E. A. Nicoll, Cambridge and St. George's ; E. F. D. Owen, St. Bart.'s ; G. E. Parker, Cambridge and St. Thomas's ; N. D. Patel, Univ. Coll. ; L. L. P. Paterson, Melbourne and St. Mary's ; R. H. Pearce and Janet R. Phillips, Birmingham ; R. A. Phillips, Cambridge and St. Thomas's ; C. B. Picken, Guy's ; H. A. Pim, St. Thomas's ; Winifred A. L. Pollock, Westminster ; H. W. A. Post, Guy's ; Margaret M. Price, St. Mary's ; O. L. Prosser, Liverpool ; Lesley M. C. Probyn, Charing Cross ; P. N. Ray, Calcutta and St. Bart.'s ; A. M. Richards, Univ. Coll. ; Hilda M. Richards, Royal Free ; A. H. Richardson, Birmingham ; J. H. O. Roberts, St. Bart.'s ; D. A. Robertson, Oxford and London ; A. P. Ross, King's Coll. ; A. W. L. Row and G. P. Roxburgh, Oxford and St. Bart.'s ; J. A. Rushworth, Manchester ; B. F. Russell, London ; N. A. Saif, Cairo and St. Thomas's ; F. G. A. Shaheed, Cairo and Westminster ; G. C. Shepherd, Charing Cross ; H. L. Shimmin, Manchester ; D. P. Simpson, St. Bart.'s ; J. W. Simpson, Manchester ; B. A. Smith, King's Coll. ; H. Smith, Cambridge and St. George's ; R. S. Smith, Univ. Coll. ; E. R. Smithard, Middlesex ; W. R. C. Spicer, Guy's ; Karin Stephen, Univ. Coll. ; C. E. R. Stephenson, St. George's ; C. L. Stote, Cambridge and London ; R. Stuppel, Cardiff and Univ. Coll. ; F. J. Swinton-Esher, Birmingham ; H. Syed, Bombay and King's Coll. ; W. K. Targett, Guy's ; J. E. Teale, Leeds ; J. G. T. Thomas, Cambridge and St. Mary's ; A. R. Thompson, London ; O. L. Truscott, St. Thomas's ; C. I. Tuckett, Cambridge and St. Thomas's ; F. B. Turner, Cambridge and London ; Aimee A. L. Vaillant, Liverpool ; L. S. P. Wakeley, King's Coll. ; A. C. R. Walton, Birmingham ; Kathleen M. Ward, Liverpool ; N. Wassif, Assiut and Charing Cross ; R. Watson, Cambridge and Univ. Coll. ; T. C. S. Webb, Univ. Coll. ; W. N. Welinkar, Bombay and Middlesex ; Beatrice A. Wilkinson, King's Coll. ; L. S. Williams, Guy's ; A. A. Wilson, McGill and St. Mary's ; A. G. Wilson, Oxford and St. Thomas's ; C. S. Wise, St. Bart.'s ; and A. H. Wortman, Univ. Coll.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—At recent dental examinations, out of 42 candidates entered, the following 16 have passed the Final Professional Examination and have been granted the diploma of L.D.S. R.C.S. Edin. :—

George C. Hodgson, Maria L. Burnet, Alexander G. L. Anderson, Francis Gibson, Bartholomew Hair, Henry G. Paterson, Ian Mc.G. Chisholm, James W. Galloway, Hugh N. Maclachlan, James A. Falconer, Edward L. Calder, Douglas J. Campbell, Henry McKenzie, Joseph L. Thomson, William Wallace, and James R. J. Cameron.

The following candidates passed in the under-mentioned subjects :—

Pathology.—John McAra, Neil I. Macmillan, Alexander S. Roberts, Bernard Silverston, Vernon L. Shearer, Andrew R. Ferguson, Gladys E. Munro, and Annie M. Kean.

Medicine.—Neil I. Macmillan, Alexander S. Roberts, Barryhill Moore, Bernard Silverston, Vernon L. Shearer, Andrew R. Ferguson, Gladys E. Munro, David Dunnet, and Edwin H. B. Gooch.

Surgery.—John McAra, Neil I. Macmillan, Bernard Silverston, Vernon L. Shearer, Andrew R. Ferguson, Gladys E. Munro, David Dunnet, Edwin H. B. Gooch, Annie M. Kean, and William G. Thow.

UNIVERSITY OF DUBLIN : SCHOOL OF PHYSIC, TRINITY COLLEGE.—At examinations held recently the following candidates were successful :—

FINAL MEDICAL EXAMINATION.

Part I., Materia Medica and Therapeutics ; Medical Jurisprudence and Hygiene ; Pathology and Bacteriology,—Gerald C. Dockeray (passed on high marks), Samuel Beggs, Ronald H. Bland, Daniel M. Brink, John R. Hanna, Harold E. Knott, and Ion W. Pigott.

In Completion.—George Q. Chance, Edward M. Gamble, J. Horwich, Evan K. Malone, and Claud E. G. Nunns.

ROYAL INSTITUTE OF PUBLIC HEALTH.—The Harben lectures for 1926 will be delivered in the lecture theatre of the Institute, 37, Russell-square, London, W.C. 1, on Nov. 15th, 18th, and 22nd, at 4 P.M., by Prof. W. W. C. Topley. The subject will be Quantitative Experiments in the Study of Infection and Resistance. All interested are invited to attend and no tickets of admission are required.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Thursday, Nov. 11th, at 5 P.M., at the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., Mr. Arthur E. Giles will lecture on Emergencies in Gynæcological Practice. On the same day, at 1 P.M., Mr. Maurice Whiting will give a demonstration in Clinical Ophthalmology at the Royal London Ophthalmic Hospital, whilst on Nov. 12th, at 2 P.M., Mr. L. C. Rivett will give a clinical demonstration at the Chelsea Hospital. Both lecture and demonstrations are open to members of the medical profession without fee. The Royal Waterloo Hospital will hold a course in medicine, surgery, and gynæcology from Nov. 15th to Dec. 4th ; the fee will be £3 3*s*. From the same date there will be a one month's clinical course in Dermatology at the St. John's Hospital (fee £1 1*s*.) ; practical demonstrations in pathology are also being arranged (fee £4 4*s*.). From Nov. 22nd onwards a week's course in Diseases of the Rectum will be given at the St. Mark's Hospital, with instruction by demonstration, operation, and lecture. A late afternoon course in Neurology will begin on Nov. 22nd and continue for four weeks at the West End Hospital for Nervous Diseases, 73, Welbeck-street, W. A course for general practitioners will be provided for by the London Temperance Hospital from Nov. 29th to Dec. 11th. Courses in Obstetrics can now be arranged at the Queen Charlotte's Hospital and the City of London Maternity Hospital and practical courses in Anæsthetics can also be arranged. Copies of all syllabuses, of the General Course Programme, and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship at 1, Wimpole-street, London, W. 1.

UNIVERSITY OF LONDON: *University College.*—The second of four lectures on Insulin by Dr. C. H. Best will be given at 5 P.M., on Nov. 10th at University College, Gower-street, W.C. 1, and the other two lectures will be at the same hour on the two following Wednesdays. Admission is free without ticket.

Birkbeck College.—A public lecture on University Education in the United States will be given by Mr. Edwin Deller, LL.D., Academic Registrar of the University, on Monday, Nov. 15th, at 5.30 P.M., in the theatre of the College. The chair will be taken by Sir William H. Beveridge, Vice-Chancellor of the University, and admission will be free without ticket. The address of the College is Bream's Buildings, Fetter-lane, London, E.C. 4.

Sir Cuthbert Wallace has been elected Dean of the Faculty of Medicine of the University of London for the period 1926–28.

HUNTERIAN SOCIETY.—A meeting of this society will be held at the Cutlers' Hall, Warwick-lane, London, E.C., on Monday, Nov. 15th, at 8.45 P.M., when there will be a discussion on Medicine and the Press. Among the speakers will be Sir Humphry Rolleston, Lord Riddell, Mr. J. M. Bulloch, LL.D. (editor of *The Graphic*), Dr. Graham Little, M.P., Mr. W. J. Evans (late editor of the *Evening News*), and Dr. Leonard Williams. Fellows may bring non-medical guests to this meeting.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—An evening meeting will be held at the society's house, 17, Bloomsbury-square, London, W.C. 1, on Tuesday, Nov. 9th, at 8 P.M., when Dr. J. H. Burn, director of the society's pharmacological laboratories, will read a paper on Some Methods of Biological Assay. Medical friends of members and associates will be welcome.

NATIONAL COUNCIL FOR MENTAL HYGIENE.—A public meeting will be held at the house of the Royal Society of Medicine, 1, Wimpole-street, London ,W. 1, on Wednesday, Nov. 17th, at 4.45 P.M., when Lord Southborough will take the chair and an address will be given by Mr. H. P. MacMillan, K.C., Chairman of the Royal Commission on Lunacy and Mental Disorder (1924-26). The third annual report of the Council may be had from the secretary at 118, Windsor House, Victoria-street, London, S.W. 1.

LECTURES ON ULTRA-VIOLET THERAPY.—A series of lectures on Ultra-Violet Therapy by Dr. Percy Hall, medical editor of the *British Journal of Actino-Therapy*, began at the Institute of Hygiene, 28, Portland-place, London, W. 1, on Nov. 3rd, and will continue on Wednesdays at 8 P.M. up to and including Dec. 8th. The subject of the next lecture on Nov. 10th is the Physics, Physiology, Biology, and Pathology of Light.

NATIONAL MILK CONFERENCE.—A national conference on Milk in Relation to Public Health will be held in the King George's Hall, Caroline-street, Great Russell-street, London, W.C., on Tuesday, Nov. 16th, from 10 A.M. Reports will be submitted by public authorities on the present conditions of the milk-suply; suggestions for its improvement will be considered. Mr. Neville Chamberlain, Minister of Health, who is President of the conference, will speak during the afternoon session; amongst other speakers during the day will be Miss Harriette Chick, D.Sc., Dr. W. G. Savage, and Prof. H. R. Kenwood. The fee for membership of the conference is one guinea and application should be made as soon as possible to the secretary, Miss J. E. Holland, at 3, Bedford-square, London, W.C. 1, from whom alone tickets may be obtained.

CONFERENCE ON MENTAL WELFARE.—Under the auspices of the Central Association for Mental Welfare a conference, postponed from May last, will be held in the Central Hall, Westminster, on Thursday, Dec. 2nd, and Friday, Dec. 3rd. The first session will be devoted to the Proper Care of Defectives Outside Institutions. Sir Leslie Scott, the President of the Association, will take the chair; Miss Ruth Darwin and Mr. J. Sandeman Allen, M.P., will read papers, and Mrs. Hume Pinsen will open a discussion. On Thursday afternoon Mr. H. P. Macmillan, K.C., Chairman of the Royal Commission on Lunacy (1924–26) will take the chair at a meeting devoted to Borderland Cases, when papers will be read by Lieut.-Colonel Edwin Goodall, M.D., and Dr. W. R. Kemlo Watson. The subject of the session on Friday morning will be the Training of Teachers for Special Schools. Dr. H. B. Brackenbury will take the chair and Lord Eustace Percy, President of the Board of Education, will give the opening address. At the afternoon session Sir Archibald Bodkin, Director of Public Prosecutions, will act as chairman, and papers on Encephalitis Lethargica and its After-effects will be read by Dr. A. F. Tredgold and Dr. F. C. Shrubsall. Tickets (price 5*s.*) for admission to all sessions of the conference, and advance copies of papers, may be had from Miss Evelyn Fox, 24, Buckingham Palace-road, London, S.W. 1.

ROYAL SOCIETY OF MEDICINE.—The annual dinner will be held at the Hotel Victoria, Northumberland-avenue, London, on Thursday, Nov. 18th, at 7.30 for 8 P.M., when it is hoped that the Prime Minister will be the guest of honour.

ROYAL DENTAL HOSPITAL OF LONDON.—The dinner of past and present students of the hospital is to be held at the Trocadero on Saturday, Nov. 20th, at 6.30 for 7 P.M., when Mr. W. H. Dolamore will preside. The medical staff of the hospital will be "at home" from 2 to 5 P.M. on the same day when cases of interest will be shown.

GRADUATES OF THE UNIVERSITY OF EDINBURGH.—The West Riding Association of Graduates of the University will hold its annual dinner at the Midland Hotel, Bradford, on Wednesday, Nov. 17th, at 7.15 P.M. Prof. Kemp Smith, Dean of the Faculty of Arts, is to be the guest of the evening. The dinner will be preceded by a general meeting at 6.30.

ROYAL NORTHERN HOSPITAL.—As we have already reported (THE LANCET, Oct. 16th, p. 834) a case of small-pox was admitted to this hospital on Oct. 7th. As soon as the diagnosis was made the patient and contacts were isolated, the staff was vaccinated, and visitors were prohibited except in cases of serious illness. Thanks to these precautions the only person to contract small-pox has been the patient who occupied the bed next to the original sufferer. In this case the disease has appeared in modified form, and the hospital is now, so to speak, out of quarantine.

ST. THOMAS'S HOSPITAL: ANNUAL DINNER OF OLD STUDENTS.—The Old Students' dinner of St. Thomas's Hospital was held on Friday last, Oct. 29th, at the Hotel Victoria, London, Dr. R. Percy Smith presiding. There was a large attendance, and among the guests present were the Director-General of the Naval Medical Service, Sir Joseph Chambers, the Director-General of the Army Medical Service, Sir Matthew Fell, Sir John Rose Bradford, Lord Riddell, the Hon. Sir Arthur Stanley, treasurer of the hospital, Dr. C. H. Bond, Dr. Ingleby Oddie, coroner for Westminster, and Sir Squire Sprigge.

The first proceeding, after the loyal toasts was the presentation to Mr. Crown of an engrossed testimonial and a cheque, the occasion being his retirement from office as janitor after serving the hospital for no less than 48 years. The episode gave the note to the speech in which the Chairman proceeded to propose the toast of The Hospital and Medical School, for in the course of an interesting review of past history he gave many instances of remarkable tenure of office in connexion with the institution. Sir Arthur Stanley replied and congratulated the audience on the success which the school was obtaining in work and play. He referred to the great generosity of Lord Riddell in connexion with the acquisition of land for additional building, so that no further encroachments will have to be made upon the quadrangles of the hospital as it was originally planned after the removal from London Bridge to Westminster Bridge. As an instance of what their splendid structure, however, cost the responsible authorities, he gave the cost of repainting the new corridor as £2000. He concluded by appealing in humorous terms for material gifts, or the money with which to buy them, the object being the furnishing of the new students' union. He mentioned easy-chairs and writing-tables and said that he would not despise ink-pots or even ash-trays. Sir Cuthbert Wallace, Dean of the school, also replied to the toast, and announced the winners of the entrance scholarships and prizes for 1926–27, and mentioned the fact that the hospital now held the football challenge cup. In recalling to the memory certain well-known men of the school who had died during the year he gave a vivid sketch of Dr. J. Maclean, who started as a veterinary surgeon, became veterinary expert to the New Zealand Government, and later decided to enter the medical profession. After qualification he was appointed surgeon to the British Seamen's Hospital at Constantinople, and at the outbreak of war joined the Armenian Red Cross. Having acquired considerable influence with the Levantines, he was for a time left free to discharge his medical duties, but at length was deported to a Turkish prison. Flatly declining to be imprisoned, he interviewed the Commandant, and remained free to exercise his medical knowledge for the benefit of his captors. On returning to England after release from captivity he was employed by the Foreign Office in the relief of our prisoners in the East, in the course of which he became solely responsible for the disbursement of many thousands of pounds. Recently he became medical officer to the London Fever Hospital, where his administrative services proved extremely valuable, and his loss to medicine, as the result of acute septicæmia, following a trivial injury to his finger, was really grave. The toast of the guests was proposed by Dr. J. S. Fairbairn and was replied to by Lord Riddell, who suggested that just as in the rule of the world the era of priests was succeeded by the era of kings, so the era of kings was now being succeeded by one of doctors. The health of the Chairman was proposed by Sir George Makins and was drunk with acclamation.

Messrs. H. K. Lewis and Co., Ltd., announce the following books for early publication: "Infections of the Hand," by L. R. Fifield; "A Shorter Surgery," by R. J. McNeill Love; "An Introduction to the Law and Tradition of Medical Practice," by W. Sanderson and E. B. A. Rayner; "Artificial Light Treatment of Children in Rickets, Anæmia, and Malnutrition," by K. M. L. Gamgee; "Ultra-Violet Rays in General Practice," by W. A. Troup; "X Ray Apparatus: Its Arrangement and Use," by P. K. Bowes; and "Popular Education in Public Health," by W. A. Daley and H. Viney.

THE LATE DR. W. H. JUDSON.—Dr. Wilfrid Hyde Judson, whose death at the age of 45 occurred at Brighton on Oct. 21st, was the youngest son of the late Mr. H. E. Judson, of Oldham, Lancashire. He graduated M.B. at the Victoria University of Manchester in 1907 and in the following year was President of the Manchester Medical Students' Debating Society. Before settling in practice at Brighton he acted as medical inspector of the Shipping Federation at Manchester, assistant medical officer in the venereal department at Charing Cross Hospital, and resident clinical assistant at the London Lock Hospital.

SOCIETY OF MEMBERS OF ROYAL COLLEGE OF SURGEONS OF ENGLAND.—This society is asking Members of the College to attend the annual general meeting of Fellows and Members to be held at the College on Thursday, Nov. 18th, at 3 P.M., and support the following resolution, to be proposed by Mr. Wansey Bayly and seconded by Dr. Redmond Roche:—

That this thirty-eighth annual meeting of Fellows and Members again affirms the desirability of admitting Members to direct representation upon the Council of the College, and respectfully requests the Council to take a postal vote of Fellows and Members on the general principle, as set out in this resolution.

It is stated that the by-laws of the College do not at present permit women to attend these meetings, though the right will presumably be granted them under the charter signed by the King in July last. The new President of the society is Dr. Ernest Ware, and the hon. secretary Dr. Sidney Lawrence, 106, Richmond Park-road, Bournemouth.

FUTURE OF THE VOLUNTARY HOSPITALS.—In reply to criticisms upon his speech at Coventry, which we briefly summarised last week (THE LANCET, Oct. 30th, p. 930), Mr. Neville Chamberlain explained in the *Times* that his policy is "wholly opposed to the creation of a State Medical Service." He is, however, anxious for "a closer coördination of the institutions existing in any given area by some body having general powers of guidance over hospital policy in that area." He adds that if the voluntary hospitals fail to take their part in such guidance "the body will undoubtedly be formed without them," an eventuality which he would "view with grave anxiety."—In his presidential address to the Incorporated Association of Hospital Officers last week the Hon. Sir Arthur Stanley advocated the formation of a hospitals association, "organised for service, protection, and progress." There already exist, he said, the Hospitals Department of the British Red Cross, the British Hospitals Association, and the Association of Hospital Officers, none of them representative of the hospitals or in a position to render complete service.

CONTINENTAL MEDICAL GRADUATES' ASSOCIATION. This association, known formerly as the Brussels University Medical Graduates' Association, held its annual dinner at the Langham Hotel on Oct. 28th, when Dr. H. Fielden Briggs, the President of the society, was supported by the Vice-President, Sir Thomas Carey-Evans. The toast of "The Association" was proposed by Sir Henry Jackson, and in response Dr. Briggs outlined the history of the Association and explained the objects—scientific and political—to be attained in the future. Under the former heading came the winter meetings at which eminent men would be asked to read papers, and summer congresses at various continental cities. Politically they would press for reciprocity of practice between this country and the European nations. Millions of English tourists and residents on the continent were unable to receive medical attention from their compatriots because they were prohibited from practising in those countries. Reform would imply an Act of Parliament to prohibit in this country the practice of medicine by unregistered persons. Mr. Hugh Edwards, M.P., signified his agreement with these remarks and promised to support such a Bill in Parliament if introduced by Sir Henry Jackson. Dr. Leonard Williams proposed the toast of "The Ladies" and Dr. Justina Wilson, in replying, contrasted the reception given to post-graduates on the continent to that at home. Sir Thomas Carey-Evans proposed "Kindred Societies," which was responded to by Mr. Mortimer Woolf, President of the Hunterian Society, and Mr. Ernest Young, President of the Chelsea Clinical Society. The concluding toast of "The President" was proposed facetiously by Dr. Campbell McClure.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—A meeting will be held at the Miller General Hospital, Greenwich, on Friday, Nov. 12th, at 8.45 P.M., when Mr. Harold Chapple will give an address on Abdominal Pain in Women.

ON Oct 1st the Sanatorium Wehrawald at Todtmoos in the southern part of the Black Forest was bought by the State Insurance Institute for four million marks and becomes from henceforth accessible only to insured patients. This sanatorium has had a long and distinguished career as an offshoot of Dr. Turban's sanatorium at Davos and now shares the fate of Dr. Walther's institution, better known in this country, in becoming part of the comprehensive system of insurance against tuberculosis which exists in Germany.

THE LATE DR. J. C. BRADSHAW.—Dr. James Charles Bradshaw, who died on Oct. 27th, in his sixty-ninth year, was well known in medical and Masonic circles in Liverpool. He studied medicine at the Royal College of Surgeons in Ireland and Queen's College, Birmingham, qualifying L.R.C.P. and L.R.C.S. Edin. in 1880, and taking the D.P.H. in 1889. He served as medical officer of health for the Sefton Rural District Council for 27 years and was a member of the old West Derby Board of Guardians. Formerly he was medical officer of health for the Brackley Rural District.

CHIROPODISTS IN CONFERENCE.—The first provincial conference of the Incorporated Society of Chiropodists was held in Manchester on Oct. 30th. The society was founded in 1913 "to support and protect the character, status and rights of chiropodists; to promote honourable professional demeanour, to repress malpractice, and to encourage scientific methods in the interests of the public and of legitimate practitioners." The society, which has now 350 members with branches in Manchester, Edinburgh, Yorkshire, and East Anglia, started the first free foot clinic for the poor in Europe, now known as the London Foot Hospital.

LEAGUE OF NATIONAL LIFE.—The first annual general meeting was held in the Caxton Hall, London, at 3 P.M. on Oct. 29th, Lord Fitzalan of Derwent being in the chair. The newly-elected President of the League, Dr. F. J. McCann, said that it was felt that contraception, or what is sometimes termed "birth control," was becoming a great national problem, indeed a problem of vital importance, and that accordingly the League was formed to influence public opinion along what they believed to be the correct lines, and to foster the perpetuation of family life which had always been one of the greatest traditions of the British race. He desired to make it clear at the outset that he did not approach the subject in any partisan spirit, his object being to seek the truth and to afford guidance to the many who are anxious to obtain it. His experience had led him to believe that the practice of contraception was evil and should be condemned because it was physically harmful to the female. Some of the methods of contraception were physically harmful to both sexes, but all known methods were in some degree harmful to the female. Physiological and clinical observations could be adduced to sustain the conclusion that the secretions of the male were absorbed by the uterus. It followed that any method of contraception which prevented or hindered this absorption deprived the female of far-reaching benefit to her bodily metabolism. Various contraceptive devices brought other dangers in their trail from infection, which was a real danger. Contraception could not be supported on medical grounds; it interfered with the whole physiological value of the sexual act, and its effects were injurious to the individual. Dr. Halliday Sutherland said that the League had been formed to combat the greatest and most insidious danger now confronting the nation and Empire. Birth prevention was race-suicide, and the suicide of a nation required less resolution than the suicide of an individual. The various fallacies of birth prevention would be exposed by experts—ethical, medical, statistical, and sociological—each writing or speaking in his own sphere. That was the immediate policy of the League. Dr. Letitia Fairfield said that perhaps the chief difficulty in the propaganda work of the League would be the fact that birth control was advocated as a panacea for every conceivable social evil. Those who undertook to oppose it are made to appear as reactionary. Members must be prepared to take up the arduous duty of disproving the case point by point, and this obviously was no light task. Experts were wanted to sit on the legal, economic, ethical, and medical subcommittees and hammer out the technicalities for the case against contraception in the closest detail. Writers—especially those with a gift for popular exposition—were wanted to shape reports into a form suitable for the public. Speakers were perhaps even more urgently required. The danger-point at the moment was the infant welfare clinic, and Dr. Fairfield described the special precautions which should be adopted to counter this form of attack.

COLLEGE OF PESTOLOGY.—The annual dinner and presentation of the Maxwell-Lefroy gold medal will take place at the Hotel Cecil on Thursday, Nov. 11th, at 7 for 7.30 P.M. Lt.-Col. Cuthbert James, M.P., will take the chair.

PRINCESS MARY AT STAMFORD INFIRMARY.—On Saturday Princess Mary opened a new wing, comprising maternity and children's wards, which have been erected as a war memorial at a cost of £11,000.

WEMBLEY HOSPITAL.—Sir J. R. Bradford, President of the Royal College of Physicians, on Saturday laid the foundation-stone of a hospital for Wembley. The cost has been found to be so much greater than was anticipated, partly on account of the coal stoppage, that further building operations are to be suspended until the dispute is settled.

SCARLET FEVER IN A LANCASHIRE INSTITUTION.—It was reported on Oct. 21st to the West Lancashire Rural District Council that a serious epidemic of scarlet fever had broken out at the School for Mental Deficients at Aughton, near Ormskirk, where 54 out of 107 inmates have been attacked. The Ministry of Health has asked for a special report. The medical officer states that he cannot trace the source of the infection.

HOSPITAL PROVISION FOR THE KENT COALFIELD.—The committee of governors of Dover Hospital have appointed a building committee to consider the best means of providing for the situation that is expected to arise from the coming development of the East Kent coalfields. The main subject for settlement is whether the hospital should be extended at an estimated cost of £15,000, or moved to another part of the town at a probable cost of £50,000. It is desired to extend the number of beds from 44 to 70.

BELFAST UNIVERSITY SERVICE CLUB.—The eighth annual dinner of this club will be held at 8 P.M. on Thursday, Nov. 11th, in Thompson's Restaurant, Donegall-place, Belfast. The President (Dr. J. S. Morrow, late Major, R.A.M.C.) will preside, and His Grace the Duke of Abercorn, V.-P., Governor of Northern Ireland, has signified his acceptance of the invitation to attend. The cost of the dinner will be 12*s.* 6*d.* (exclusive of wines) and those past and present Queensmen who wish to attend are requested to signify their intention of attending to the hon. secretaries, Dr. Robin Hall, 35, University-road, Belfast, or Major R. McCreary, *M.C.*, 15, Donegall Park-avenue, Belfast. On the same day, at 11 A.M., a wreath will be placed at the War Memorial in the University grounds in memory of fallen Queensmen, when it is hoped that all past and present Queensmen who can will attend.

ROYAL VICTORIA HOSPITAL, BELFAST.—The present session was opened on Oct. 19th, when an address was delivered by Mr. S. T. Irwin, F.R.C.S.I., who traced the history of the hospital from its origin in the old General Hospital in Frederick-street, which was opened in 1817. Various additions, he said, had been made from time to time, but the rapid growth of Belfast had made the hospital quite inadequate to the needs of the city, and in 1923 the present buildings had been erected, largely owing to the exertions of Lady Pirrie and the late Lord Pirrie. The hospital was built on the plenum system and represented the latest modern ideas. The work continued to grow rapidly; the staff had increased from 17 to 37, the residents from 4 to 14, and the nursing staff from 60 to 150. The number of patients, intern and extern, had been doubled. The recent extensions which were now complete, had raised the number of beds to 436, and all departments had received additions and more adequate equipment. The newly established dental department had had about 10,000 cases in the past year.

INSPECTION OF SCHOOL-CHILDREN IN IRELAND.—Mr. E. F. Stephenson, F.R.C.S.I., chief medical officer of the Department of Local Government and Public Health, gave an interview last week in which he described the inspection of school-children shortly to be undertaken in the Irish Free State. The local authorities, he said, would, in the first instance, prepare draft schemes detailing the number of National schools and the number of children. When appointed, the county medical officers of health would make preliminary surveys of the schools to get a working knowledge of the general physique and the standard which children of approximately the same age have attained in the different schools. The regulations provided for a general inspection of children and for inspection of children at specified age-periods. Each child would be first given a general examination by a doctor and then those who suffered from any particular defect would be treated. It was intended to utilise the existing hospitals as treatment centres and to make use of the services of nurses employed by district nursing associations, thus encouraging voluntary effort. In several cases special clinics, especially dental clinics, would be required. It was intended, Mr. Stephenson said, to coördinate the scheme with maternity and child welfare work.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—The first of a series of three lectures on the History of Medicine will be given in the College, Newcastle-upon-Tyne, by Dr. Charles Singer, on Nov. 19th, at 4.45 P.M.; all medical practitioners in the neighbourhood are invited.

Sir Thomas Oliver has been elected President of the College of Medicine, University of Durham, in place of Sir David Drummond, who has resigned, after serving the College in this capacity for eight years.

ROYAL SOCIETY OF EDINBURGH.—At the annual statutory meeting of this society held on Oct. 25th, Prof. Thomas Bryce, F.R.S., was elected a Vice-President. Amongst the councillors appointed were Lieut.-Colonel A. G. McKendrick, Prof. David Waterston, and Dr. Logan Turner.

SAVE THE CHILDREN FUND.—A concert party known as the Magpies is giving an entertainment at King George's Hall, off Tottenham Court-road, London, on the evening of Friday, Nov. 12th, in aid of the fund's first open-air residential school for delicate London children, established at St. Peter's, near Broadstairs. Tickets, from 1*s.* 3*d.* to 5*s.*, may be had from the concert secretary, 26, Gordon-street, London, W.C. 1.

DEFECTIVE BIRMINGHAM CHILDREN.—An extension of the Baskerville School for Physically Defective Children at Harborne has been opened by the Duchess of Atholl, M.P., Parliamentary Secretary to the Board of Education. The original intention of providing a school for crippled children was diverted into one for succouring children suffering from heart trouble. There has thus been provided what the Duchess described as "a new type in the provision of schools for defective children." The alteration was determined upon when it was found that the main source of supply was children suffering from the effects, especially upon the heart, of rheumatic affections.

SURGICAL INSTRUMENT MANUFACTURERS' ASSOCIATION.—The annual dinner was held at the Holborn Restaurant on Oct. 29th, Mr. G. W. Mayer presiding. The principal guests were Mr. Irwin Moore and Mr. L. Ferris-Scott. Mr. Patrick C. Maw, in proposing the toast of the association, said British surgical instruments were the product of skilled workmen, who took pride in turning out the best. The Chairman, in replying, said they had to try to induce surgeons and institutions throughout the country to order British goods. Mr. Irwin Moore, in replying to the toast of "The Guests," which was ably proposed by Colonel A. Young, said that he and all surgeons owed a deep debt of gratitude to the British surgical instrument makers, who were ever ready and willing to assist them. It was a well-known fact that no surgical instruments in the world could compete or compare in quality or efficiency with the British surgical instruments.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, Nov. 8th.—5 P.M., WAR. Colonel J. W. West, R.A.M.C.: Peace-time Military Surgery.

TUESDAY.—5 P.M., THERAPEUTICS AND PHARMACOLOGY. Discussion on the Biological Standardisation of Remedies, to be opened by Dr. H. H. Dale. 8.30 P.M., PSYCHIATRY. Prof. Geo. M. Robertson: An Analysis of the Decrease in the number of Deaths from General Paralysis in England and Wales.

WEDNESDAY.—5.30 P.M., SURGERY: SUBSECTION OF PROCTOLOGY (specimens at 4 P.M.). Presidential address: Mr. J. P. Lockhart-Mummery: Non-malignant Tumours of the Colon and Rectum. A discussion will follow. There will be a collection of specimens of non-malignant tumours of the colon and rectum, excluding diverticulitis, from London and provincial hospitals.

THURSDAY.—8.30 P.M., NEUROLOGY. Clinical meeting at the West End Hospital for Nervous Diseases.

FRIDAY.—5.30 P.M., CLINICAL. (Cases at 5 P.M.) Mr. P. Turner: A Case of Pseudo-Hermaphroditism. Dr. Worster-Drought: Charcot's Arthropathy of Wrist. Mr. W. E. Tanner: A Case of Elevation of the Scapula. Mr. E. Pearce-Gould: A Case for Diagnosis. Dr. Parsons-Smith: A Case of Pleural Effusion of Doubtful Origin. Mr. F. D. Saner: Symptomless Abdominal Tumour for Diagnosis. Mr. N. L. Eckhoff: A Case of Diaphyseal Aclasia. Dr. Dorothy Hare: Splenomegaly and Cirrhosis wih Facial Telangiectases.

Mr. E. G. Slesinger: Carcinoma of the Thyroid. Cases will also be shown by Prof. C. A. Pannett and Mr. H. W. Carson. 8.30 P.M., OPHTHALMOLOGY. (Cases at 8 P.M.) Discussion on Macula Colobomata, to be opened by Mr. Malcolm L. Hepburn. Drawings illustrating the condition will be shown.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.
MONDAY, Nov. 8th.—8.30 P.M., Discussion on Sternal Pain, to be introduced by Dr. John Parkinson, followed by Mr. A. J. Walton.

BIOCHEMICAL SOCIETY.
MONDAY, Nov. 8th.—5 P.M. (In the Chemical Department, St. Thomas's Hospital Medical School.) *Communications.* J. Needham (introduced by D. M. Needham): The Rhythm of Chemical Differentiation in Avian Embryos. E. M. Goldblatt: Some Observations on Acidosis and Alkalosis. W. J. Griffiths and H. MacLean: The Part Played by Regurgitation in Gastric Digestion. J. Lowndes: Estimation of Cystine in the Modified Van Slyke Method of Analysis of Proteins. R. H. A. Plimmer: Changes in the Amino Acids in the Proteins of the Hen's Egg during Development. J. L. Rosedale: The Amino Acids of Flesh. H. W. Dudley, O. Rosenheim, and W. W. Starling: Spermidine, a Hitherto Undescribed Base Occurring in Animal Tissues. W. J. N. Burch: Hydrolysis of Phosphoric Esters. R. H. A. Plimmer and W. J. N. Burch: The Action of Ethyl Metaphosphate on Alcohols, Ammonia, and Some Amino Compounds. J. G. Davis and W. K. Slater: Aerobic and Anaerobic Metabolism of the Cockroach.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.
TUESDAY, Nov. 9th.—5 P.M., Dr. Arthur Shadwell: Medicine in Ancient Assyria. (First Fitz-Patrick Lecture.)
THURSDAY.—5 P.M. (Second Fitz-Patrick Lecture.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn-fields, W.C.
THURSDAY, Nov. 11th.—5 P.M., Prof. E. W. Hey Groves: Reconstructive Surgery of the Hip Joint. (Bradshaw Lecture.)

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, Nov. 8th, to SATURDAY, Nov. 13th.—FELLOWSHIP OF MEDICINE. Special lecture at the Medical Society of London, 11, Chandos-street, Cavendish-square, W. Thurs., Nov. 11th, at 5 P.M., Mr. A. E. Giles: Emergencies in Gynæcological Practice. Free to members of the medical profession.—ROYAL LONDON OPHTHALMIC HOSPITAL, City-road. Thurs., Nov. 11th, at 1 P.M., Mr. Maurice Whiting: Clinical Demonstration. Free to members of the medical profession.—CHELSEA HOSPITAL FOR WOMEN, Arthur-street, S.W. Fri., Nov. 12th, at 2 P.M., Mr. L. C. Rivett: Special Demonstration. Free to members of the medical profession.—HAMPSTEAD GENERAL HOSPITAL, Haverstock-hill, N.W. Practitioners' course in medicine, surgery, and the specialties, 4.30 to 6 P.M. Clinical demonstrations and short lectures. Further information from the Secretary of the Fellowship of Medicine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY, Nov. 8th.—2 P.M., Medical Cases in the Wards. 2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.
TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.
WEDNESDAY.—2.30 P.M. to 5 P.M., Medical Skin and Eye Clinics. Operations.
THURSDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose, and Throat Clinics. Operations.
FRIDAY.—2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.
On Monday, Nov. 8th, and Friday, Nov. 12th, at 2.30 P.M., there will be Special Demonstrations of Medical and Surgical Cases by Dr. J. B. Alexander and Mr. E. Gillespie respectively.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith.
MONDAY, Nov. 8th.—11 A.M., Mr. Tyrrell Gray: Surgical Wards. 12 noon, Mr. Simmonds: Fractures and Applied Anatomy. 2 P.M., Dr. Scott Pinchin: Medical Out-patients.
TUESDAY.—11 A.M., Mr. Endean: Venereal Diseases. 12 noon, Dr. Burrell: Chest Cases. 2 P.M., Mr. Banks-Davis: Throat, Nose, and Ear Dept.
WEDNESDAY.—10.30 A.M., Dr. Burnford: Medical Wards. 2 P.M., Dr. Owen: Medical Out-patients. 2 P.M., Mr. Gibb: Eye Dept.
THURSDAY.—11 A.M., Resident Assistant Surgeon: Surgical Wards. 2 P.M., Mr. MacDonald: Genito-Urinary Department. 2 P.M., Mr. Donald Armour: Operations.
FRIDAY.—10 A.M., Sir Henry Simson: Gynæcological Operations. 12.15 P.M., Dr. Pritchard: Modern Methods in Medicine. 2 P.M., Mr. Sinclair: Surgical Out-patients.
SATURDAY.—9.30 P.M., Dr. Burnford: Bacterial Therapy Department. 10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks Davis: Throat, Nose, and Ear Operations.
Daily, 10 A.M. to 5 P.M., Operations, Medical, Surgical, and Special Out-patients Departments, Operations. Saturdays, 10 A.M. to 1 P.M.

UNIVERSITY COLLEGE, Gower-street, W.C.
WEDNESDAY, Nov. 3rd.—5 P.M., Dr. C. H. Best: Insulin. (First of four advanced lectures in Pnysiology.)

POST-GRADUATE HOSTEL, Imperial Hotel, Russell-square, W.C.
TUESDAY, Nov. 9th.—9 P.M., Dr. S. Wright: The Output of the Heart in Health and Disease.
THURSDAY.—9 P.M., Mr. H. A. Harris: Epiphyses. Dinner, 8 P.M., 5*s*.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street.
THURSDAY, Nov. 11th.—4 P.M., Mr. Barrington-Ward: Common Congenital Malformations.

NATIONAL HOSPITAL, Queen-square, Bloomsbury, W.C.
MONDAY, Nov. 8th.—2 P.M., Dr. Hinds Howell: Out-patient Clinic. 3.30 P.M., Mr. Williamson-Noble: Papillœdema.
TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Risien Russell: Incoördination.
THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Mr. Just: Methods of Testing the Eighth Nerve (in Out-patient Department).
FRIDAY.—2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Mr. Perkins: The Treatment of Poliomyelitis.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Nov. 9th.—5 P.M., Dr. H. MacCormac: Diseases Due to Animal Parasites.
THURSDAY.—5 P.M., Dr. A. C. Roxburgh: Eruptions Due to Physical Causes.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, Nov. 9th.—4.15 P.M., Dr. W. E. Gye: An Outline of the Knowledge gained by the Experimental Study of Cancer. (Lloyd Roberts Lecture.)
FRIDAY.—4.15 P.M., Mr. J. F. Dobson: Oral Cancer.

ST. MARGARET'S HOSPITAL FOR WOMEN, Acomb-street, Whitworth Park, Manchester.
WEDNESDAY, Nov. 10th.—4 P.M., Mr. A. C. Magian: Insufflation of the Fallopian Tubes in Sterility and X Rays in the Diagnosis of Pregnancy.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.
FRIDAY, Nov. 12th.—3.30 P.M., at the Royal Infirmary: Mr. Cuff: Surgical Clinical Cases.

ANCOATS HOSPITAL POST-GRADUATE COURSE.
THURSDAY, Nov. 11th.—4.15 P.M., Mr. F. Holt Diggle: Tonsillectomy.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.
TUESDAY, Nov. 9th.—4 P.M., Prof. Ashley Mackintosh: The Treatment of Arteriosclerosis. Discussion to be opened by Dr. Bryson.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C.
WEDNESDAY, Nov. 10th.—4 P.M., Prof. Winifred Cullis: Industrial Psychology Applied to the Home.

Appointments.

DAVIES, IVOR HUGHES, M.B., Ch.B. Liverp., has been appointed District Medical Officer and Vaccination Officer for the Unchaled District of Corwen Union.

NELIS, IRIS PHILIPPINE, L.R.C.P. & S.I., Medical Officer of Health to the Mold Urban Council.

Vacancies.

For further information refer to the advertisement columns.

Bath, Royal United Hospital.—H.P. and H.S. At rate of £120 and £100 respectively.
Birmingham and Midland Homœopathic Hospital and Dispensary.—H.S. £150.
Birmingham, Queen's Hospital.—Hon. Dental Surgeon. Also Hon. S. to Ear, Nose, and Throat Dept.
Birmingham Union, Selly Oak Hospital.—Res. Jun. Asst. M.O. At rate of £200.
Calcutta Presidency College.—Prof. of Physiology. Rs.650 per month.
Cancer Hospital, Fulham-road, S.W.—Jun. Radiologist. £500.
Carlisle Non-Provident Dispensary.—Res. M.O. £300.
Cheshire County Council.—Two Dist. Tub. O.'s. Each £600.
City of London Maternity Hospital, City-road, E.C.—Asst. Res. M.O. At rate of £80.
Cosford Union.—Dist. M.O. for Kersey Relief District. £44 3*s*. 8*d*.
Eastern Dispensary, Leman-street, E.—Gynæcologist.
Elizabeth Garrett Anderson Hospital, Euston-road, N.W.—H.P. Obstet. Asst. and two H.S.'s. Each at rate of £50. Also Clin. Assts.
Federated Malay States Medical Dept.—Radiologist. £700.
Freemason's Hospital and Nursing Home, 237, Fulham-road, Chelsea, S.W.—Res. M.O. At rate of £250.
Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—Asst. P.
Hull Royal Infirmary.—Hon. Phys.

London, Female Lock Hospital, 283, Harrow-road, W.—Hon. Obstet. S.
London Temperance Hospital, Hampstead-road, N.W.—Hon. P.
Manchester, Baguley Sanatorium.—Asst. M.O. £350.
Manchester Royal Infirmary.—Sen. Pathological Registrar. £100. Also Surgical Tutor. £30. Also Hon. Neurological Surg.
Manchester, Victoria Memorial Jewish Hospital.—Jun. H.S. At rate of £120.
Manor House Hospital, Golders Green, N.W.—Asst. S. £750.
Middleton-in-Wharfedale Sanatorium.—Sen. Asst. M.O. £600.
Miller General Hospital for South-East London, Greenwich-road, S.E.—Asst. P. and two Asst. S.'s.
Northampton General Hospital.—Hon. S.
Oxford, Radcliffe Infirmary and County Hospital.—Hon. Asst. S. and Hon. Asst. Phys. to Electro-therapeutic Dept.
Portsmouth, St. Mary's Infirmary, &c.—Third Asst. Res. M.O. £250.
Royal College of Physicians, Pall Mall East.—Milroy Lecturer for 1928.
Royal Northern Hospital, Holloway, N.—M.O. to Out-patients. At rate of £125. Also H.S. At rate of £70.
St. George's Hospital, S.W.—Temp. Obstet. Reg. £40.
St. Mary's Hospital for Women and Children, Plaistow, E.—Res. M.O. and Asst. Res. M.O. At rate of £175 and £130 respectively.
Shanghai Municipal Council, Public Health Dept.—Asst. Pathologist. Tls.600 per mensem.
Sheffield, Winter-street Hospital.—Res. Tuberculosis M.O. £350.
Shrewsbury, Salop Mental Hospital.—Second Asst. M.O. £500.
South Uist Parish and Northern Division.—M.O. and Pub. Vaccinator. £620.
Throat Hospital, Golden-square, W.—Sec. Supt. £500. Also H.S. At rate of £100.
Truro, Royal Cornwall Infirmary.—H.S. £170.
West London Hospital, Hammersmith, W.—Phys.

The Chief Inspector of Factories announces the following vacant appointments for Certifying Factory Surgeons: Dulverton, Somerset; St. Andrews, Fifeshire; Tiverton, Devon; and Richmond, Surrey.

Births, Marriages, and Deaths.

BIRTHS.

BUCHANAN.—On Oct. 24th, at Dale House, Shaw, the wife of Dr. Buchanan, of a son.
ENNION.—On Oct. 26th, at Harlech House, Burwell, Cambs., the wife of E. A. R. Ennion, M.R.C.S., L.R.C.P., of a daughter.
MOORE.—On Oct. 25th, 1926, at Malta, the wife of Surgeon-Commander Maurice Sydney Moore, M.D., D.P.H., R.N., of a son.

MARRIAGES.

HURRELL—LIMONT.—On Oct. 28th, at St. Luke's, West Norwood, George Hurrell, M.D., B.S., D.P.H. (Dunelm), elder son of Mr. and Mrs. G. Hurrell, of North Shields, to Margaret Evangeline, second daughter of the late James Limont, M.R.C.P., of Newcastle-upon-Tyne, and Mrs. Limont, of West Norwood.
MILLER—BAILEY.—On Oct. 30th, Thomas Duff Miller, M.D., F.R.F.P. & S. Glasg., to Trixie, only daughter of Mr. and Mrs. C. W. Bailey, of Battersea Park.

DEATHS.

BARENDT.—On Oct. 28th, suddenly, Frank H. Barendt, M.D. Lond., F.R.C.S. Eng., of Rodney-street, Liverpool.
CHURTON.—On Oct. 30th, at Cromer-road, Leeds, Thomas Churton, M.D., in his 88th year.
CROWDY.—On Oct. 26th, at South Grove, Highgate, Frederic Hamilton Crowdy, M.D., in his 75th year.
FLEETWOOD.—On Oct. 27th, at his residence, Tye House, Hadleigh, Suffolk, William Hardy Fleetwood, M.R.C.S., L.R.C.P.
MACKNESS.—On Oct. 31st, at Auchlean, Broughty Ferry, George Owen Carr Mackness, M.D.
RUDGE.—On Oct. 24th, at Whiteladies-road, Bristol, Charles King Rudge, M.R.C.S., L.R.C.P., aged 80.
SMITH-WYNNE.—On Oct. 26th, at Amersham, Bucks, suddenly, of heart failure, Graham Shaw Arnold Smith-Wynne, M.R.C.S., L.R.C.P.
WARNER.—On Oct. 26th, at "Whitbourne," Warlingham, Surrey, Francis Warner, M.D., F.R.C.P., F.R.C.S., in his 80th year.
WILLES.—On Oct. 30th, at Queen Adelaide-road, Penge, S.E., Joseph Willes, M.R.C.S., L.S.A. (Guy's), aged 88.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NEWCASTLE-UPON-TYNE THROAT, NOSE, AND EAR HOSPITAL.—The Duchess of Northumberland has opened a new wing in which modern operating theatres have been provided and the internal arrangements greatly improved. The work has drained the resources of the hospital, which has never before appealed for money, although it has been in existence for nearly 50 years.

Notes, Comments, and Abstracts.

MENTAL HOSPITALS

AND THEIR RELATION TO GENERAL AND TO OTHER SPECIAL HOSPITALS.*

BY G. F. BARHAM, M.D. CAMB.,
MEDICAL SUPT., LONDON COUNTY MENTAL HOSPITAL, CLAYBURY.

THE position which mental hospitals shall occupy in any comprehensive scheme of hospital organisation has become a question of national importance. It is only necessary to point to the high proportion of the population affected, to the magnitude of the problem of insanity, with its inseparable legal complications, and to the urgent need for team-work for research into the causes of mental disease, the discovery of new methods of treatment, and for investigating the whole question from the standpoint of preventive medicine. Mental hospitals cannot cope single-handed with these problems, for they mainly deal with the more advanced forms of disease. But neither can any other organisation which does not bring them into line in a uniform attack. The reason for insisting on this point is made clear by examining the trend of certain movements for reforming the lunacy law, and our methods of dealing with early forms of mental disorder. The pivot of these movements is the unsatisfactory working of the law, especially in its application to incipient and early cases, and the backward state of our knowledge of mental disease. They have already helped to bring about much improvement in organisation and education, and the Royal Commission which they helped to promote holds promise of many desirable reforms.

The Unity of Mental Disease.

There are, however, aspects of the propaganda employed which demand serious consideration. In the eagerness to secure freedom to treat early cases in clinics and nursing homes, and to avoid certification, the unity of mental disease tends to be overlooked. Mental hospitals have, often most unjustly, been maligned and suggestions have been made, the application of which would lead to the widening of the gulf of morbid sentimentality, which stands between these hospitals and the community, and tends moreover, to separate them from other branches of medicine. There is, in fact, a danger that the present tendency will, intentionally or otherwise, accentuate the isolation of mental hospitals, and that the more pronounced forms of disease with which these hospitals deal will remain beyond the borderland in a class marked off from all other forms of disease, thus perpetuating the stigma which ignorant prejudice attaches to them, and that the clock will be set back upon the time when a more enlightened community attains some understanding of the meaning and nature of disordered function of the brain and mind. The treatment of mental disease was formerly carried on without any active or close association with general medicine. For more than a generation, however, mental institutions have been progressively reforming themselves from within, but progress has been slow and there has been but little constructive help from outside. Not only was psychiatry neglected and badly taught in medical schools, but there was little tendency on the part of the medical centres, of universities, until quite recent times, to take any active part in solving the problems inherent in disease of the mind, or in grappling with the urgent need for teaching psychological medicine, or providing facilities for treating early cases.

Hospitalisation of Asylums.

The adoption of the title "mental hospital" in place of asylum represented more than a mere change of nomenclature. It marked at least one milestone on the difficult road taken by those who sought to change the whole character of these institutions. Hospitalisation of asylums means, in effect, not only the acquirement of hospital equipment and the employment of the discoveries of modern scientific medicine in the investigation and treatment of mental disease, but also an endeavour to secure the coöperation of specialists in other branches of medicine, concentration on organised research work, and the efficient teaching of psychiatry. Associated with this change, moreover, is the establishment of training schools with qualified teachers for mental nurses, and an endeavour to enlist the help and interest of general trained nurses in this highly specialised branch of nursing.

The old conception of the asylum is one that is rapidly passing. Mental hospitals are no longer mysterious closed institutions with conspicuously locked doors and blocked

* An appendix to the Seventh Annual Report on the Voluntary Hospitals in Great Britain, Red Cross Joint Council, 19, Berkeley-street, London, W. 1. 1s. 6d. post free.

windows, nor are they now essentially places of detention. Discharge of a patient is in most cases an easy matter. The hospital is freely open to public inspection, hospital visitors are encouraged, and convalescence and recovery are the first objects of treatment, and there are wide facilities for the freedom and occupation of the patients. It is, of course, essential that incipient and early cases of mental disorder should not be associated with more pronounced insanity, and to this end the widest facilities are required for their treatment in clinics, and for a really effective classification when it becomes necessary to place them in mental hospitals. But in all the propaganda for separate treatment outside mental hospitals, how frequently the unity of mental disease is overlooked. A patient, for example, suitable for treatment in a clinic or nursing home in one phase of the disease, may be quite unacceptable in another. The extreme variableness of the manifestations of any one form of disorder renders the closest coöperation and the easiest facilities for interchange between clinics and mental hospitals essential. But this end will not be gained by any measure which does not break down the general prejudice against the latter institutions, nor helps to remove the suspicion and dread which so often is attached to them.

A New Conception of Mental Hospital.

It is one of my objects to show that the closest coöperation between general hospitals, clinics, and mental hospitals is essential not only for the efficient treatment of mental disease, but also to coördinate research and to place the mental hospitals in a position to carry on their proper work, not isolated from, but in association with, other hospitals. The way is prepared for a new era in the treatment of mental disease, and it is contended that the open coöperation of the medical profession in this treatment will more effectually than by any other means restore public confidence and remove that dread of asylums which has done so much harm in fostering the growth of chronic insanity. Recognition of the importance of psychological medicine, not alone in the treatment of actual mental disease, is daily becoming more widespread. The evidence before the Royal Commission abundantly testifies to the general desire for liberty to treat mental cases in clinics, general hospitals, and private homes, as well as in mental hospitals. The opening of the Maudsley Hospital marked an important advance. There is scope for many more similar hospitals, but there is perhaps still greater need at the present time for psychiatric and neurological clinics at all general hospitals, especially those attached to schools of medicine. The provision of facilities for in-patient treatment of early mental cases is a question of public interest, and is required for teaching and research. Even a liberal provision of clinics, however, must leave untouched the major problem of the treatment of the great mass of certifiable cases as well as of those early cases for which the clinics would be unsuitable. Moreover, the situation of the modernised mental hospital and the opportunities it affords are more adaptable for the care and treatment of the majority of mental cases, certified or voluntary, a very large proportion of which will always require the care of a rate- or State-supported hospital under State supervision.

Linking up of Hospital Units.

The question at issue concerns the part mental hospitals shall play in the linking up of hospital units in the future organisation of an efficient medical service. No sequestered position beyond an ill-defined borderland will suffice to remove the present disabilities under which these institutions labour. Mental hospitals must take an equal place with other special hospitals. Their participation in the general progress of medicine can alone be achieved by measures which, while comprising a single organisation for the mental welfare of the community, make adequate provision for the treatment of the physical as well as the psychological aspect of mental disease and enable mental hospitals to work in coöperation with other hospitals. The realisation of this objective requires :—

1. The formation of homogeneous units within a scheme of hospital organisation to include the clinic of a general hospital, a reception hospital, and a mental hospital.
2. The development of existing institutions which must of necessity function in any comprehensive scheme dealing with mental disease, and the promotion of coöperation between them and other hospital units by means of visiting staff and easy facilities for interchange and for out-patient treatment.
3. The utmost possible freedom to treat mental cases in clinics and private houses and the adoption of the voluntary system on the widest basis compatible with security.
4. The education of public opinion in regard to mental disorders and the need for early treatment ; and the removal, as far as possible, of all semblance of compulsion and detention.

If this position is accepted, the mental hospital of the future will take its place as one unit of a special department in an organised scheme for hospital treatment subserving defined areas, and mental patients will participate in those benefits and humane considerations open to all free members of the community. Such a comprehensive scheme will no doubt take much time and energy in realisation.

Affiliation with General Hospitals.

In the meantime mental hospitals stand in urgent need of assistance through coöperation, and an intermediate step in the direction of a working affiliation with general hospitals—already in force in a few instances and under contemplation in others—would be a most desirable preparatory move towards the more comprehensive organisation. Affiliation implies a voluntary working association between a mental hospital and the nearest general hospital, where possible attached to a school of medicine, for the purpose of :

1. Increasing the means for the treatment of mental disease.
2. Organising research work.
3. Developing the teaching of psychological medicine.
4. Increasing the facilities for training nurses.

By affiliation mental hospitals would acquire the services of a consultant staff of specialists, and the association of the mental hospital staff with doctors specialising in other branches of medicine working together in a general hospital, especially when this association brings them into contact with a teaching centre, must greatly increase the scope of treatment of those physical disorders so abundantly found in mental cases, and stimulate interest in psychological medicine.

The establishment of psychiatric and neurological clinics at general hospitals, with provision of beds, as well as out-patient treatment, would form valuable centres for receiving and treating certain early cases and other cases of interest, or for diagnosis, either directly or by transfer from the mental hospital. Patients absent on trial from the mental hospital could, moreover, receive further supervision and treatment if required in the out-patient department of the clinic, a procedure which would be of great assistance in dealing with convalescing cases, especially if medical officers of the mental hospital could hold assistant posts in this department. With amendment of the Lunacy Acts, which there is good reason for anticipating will include a wide adoption of the voluntary system and simplification of the formalities of admission, easy transference between the clinic and mental hospital would be of inestimable benefit to both patients and relatives, and would greatly help in the difficult question of classification in dealing with the varying phases and forms of mental disease.

Students and Nurses.

On the other hand, the valuable material available in mental hospitals would be at the disposal of medical schools, for research work and for teaching students. Clinical assistantships and temporary medical appointments would be available at the affiliated mental hospital, and post-graduate instruction and familiarity with mental disease facilitated. Finally, there is the important question of nursing. As stated above, much attention is now given to training mental nurses, and nurses possessing a general nursing certificate are sought after in mental hospitals. Certificated mental nurses, moreover, are now frequently seconded for the purpose of obtaining a general certificate, and the matrons of most mental hospitals require to possess the double certificate. Few people to-day would criticise adversely the advantage of this double training, or the benefit to any nurse of a knowledge of mental reactions both normal and abnormal, and it is to be hoped that under affiliation reciprocal facilities may be afforded for the higher training of the most efficient nurses.

Psychiatry has often been referred to as the sick sister of medicine. The last report of the Board of Control bears testimony to the strenuous effort that is being made to remove this reproach. Will the general hospitals proffer the assistance that is sought? Psychology—normal and abnormal—is still the weakest spot in the medical curriculum. A combined effort is required to ensure progress and awaken the interest of the whole profession in the mental aspect which is never negligible in all other manifestations of disease.

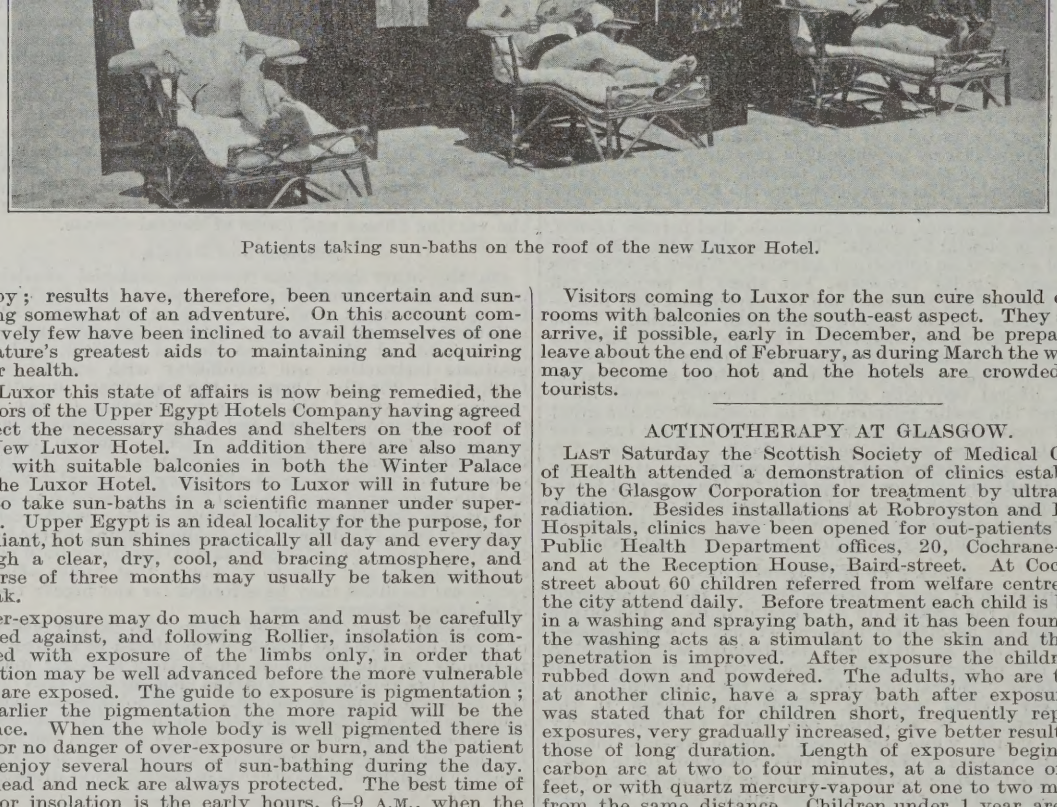
"THE LEECH."

THE most recent addition to medical journals is *The Leech*, of which the first number has just been issued by and for students of the Welsh National Medical School. Its format is pleasing and the subject matter well planned, both serious and frivolous material finding a place. Prof. David Hepburn writes on the Importance of Anatomy, Mr. Lambert Rogers on Thyrotoxicosis, Mr. John Pryde on Biochemistry and Modern Medicine, and Mr. S. S. Budd describes a case of phantom tumour in a girl of 14 years. Miss E. Williams contributes some short notes on the early history of endocrinology and the rest of the issue is filled by reports of students' activities and by articles and anecdotes in lighter vein. Proof reading has, on the whole, been careful ; there is a misprint in the legend to the electrocardiogram on p. 12, where "head" should read "lead" and the name of Dr. Harington, who has recently revised the formula of thyroxine, is mis-spelt. The journal should serve to strengthen the moral of this new school and to promote and maintain contact between its members.

SUN-BATHING IN UPPER EGYPT.

BY GEORGE V. WORTHINGTON, M.B., B.C. CAMB.

FOR years past a certain number of visitors in search of health, and tourists also, have been in the habit of taking sun-baths in a casual way without knowledge and without seeking advice. Each winter season I am called to see a few of them suffering more or less severely from over-exposure, the result of this want of knowledge. In no resort in Egypt has there been provided, up to the present, any proper accommodation or efficient facilities for sun-therapy; results have, therefore, been uncertain and sun-bathing somewhat of an adventure. On this account comparatively few have been inclined to avail themselves of one of Nature's greatest aids to maintaining and acquiring proper health.



Patients taking sun-baths on the roof of the new Luxor Hotel.

In Luxor this state of affairs is now being remedied, the directors of the Upper Egypt Hotels Company having agreed to erect the necessary shades and shelters on the roof of the New Luxor Hotel. In addition there are also many rooms with suitable balconies in both the Winter Palace and the Luxor Hotel. Visitors to Luxor will in future be able to take sun-baths in a scientific manner under supervision. Upper Egypt is an ideal locality for the purpose, for a brilliant, hot sun shines practically all day and every day through a clear, dry, cool, and bracing atmosphere, and a course of three months may usually be taken without a break.

Over-exposure may do much harm and must be carefully guarded against, and following Rollier, insolation is commenced with exposure of the limbs only, in order that toleration may be well advanced before the more vulnerable parts are exposed. The guide to exposure is pigmentation; the earlier the pigmentation the more rapid will be the advance. When the whole body is well pigmented there is little or no danger of over-exposure or burn, and the patient may enjoy several hours of sun-bathing during the day. The head and neck are always protected. The best time of day for insolation is the early hours, 6–9 A.M., when the air is coolest. Later in the day the periods must be shorter and the intervals more frequent.

The subjective effects of sun-bathing include a sense of general well-being and exhilaration if the exposure has been correct; resistance is increased and pain is relieved. If the exposure has been too great, lassitude, headache, and perhaps vertigo are complained of. An overdose may produce acute and prolonged headache, nervous irritability, and insomnia. The objective effects include a slight and temporary rise of temperature and increase in rate of pulse and respiration. The muscular system is improved in tone.

Cases in which insolation is beneficial are the following. Fibrositis and the various forms of chronic rheumatism, including sciatica and other forms of neuritis. These can usually take a prolonged course without break, but individuals liable to attacks of acute gout must proceed cautiously. A sojourn in Egypt has been recommended almost as a climatic specific for rheumatoid arthritis, and the majority of cases are greatly benefited, but not all. A certain number do not improve in a warm climate, even if dry, and do better in the Engadine or other Alpine resort. The history may be taken as a sure guide; if the patient dislikes cold and suffers more in the winter, he should choose a warm place to winter in. Chronic bronchitis and emphysema and chronic nasal catarrh of the hypertrophic variety all derive much benefit; cough subsides and excessive secretion dries up. Anæmic girls require a mild but prolonged sun cure, when they become toned up, rested, and bronzed. Early cases of nephritis do well; the freely-acting skin relieves the kidneys. Early high tension cases improve if sufficient time is allowed. Neurasthenics often show rapid improvement under the action of sun, rest, and quiet. Any septic focus in teeth, tonsils, or nasal sinuses should, of course, be dealt with before the journey is taken.

Visitors coming to Luxor for the sun cure should engage rooms with balconies on the south-east aspect. They should arrive, if possible, early in December, and be prepared to leave about the end of February, as during March the weather may become too hot and the hotels are crowded with tourists.

ACTINOTHERAPY AT GLASGOW.

LAST Saturday the Scottish Society of Medical Officers of Health attended a demonstration of clinics established by the Glasgow Corporation for treatment by ultra-violet radiation. Besides installations at Robroyston and Ruchill Hospitals, clinics have been opened for out-patients at the Public Health Department offices, 20, Cochrane-street, and at the Reception House, Baird-street. At Cochrane-street about 60 children referred from welfare centres over the city attend daily. Before treatment each child is bathed in a washing and spraying bath, and it has been found that the washing acts as a stimulant to the skin and that the penetration is improved. After exposure the children are rubbed down and powdered. The adults, who are treated at another clinic, have a spray bath after exposure. It was stated that for children short, frequently repeated, exposures, very gradually increased, give better results than those of long duration. Length of exposure begins with carbon arc at two to four minutes, at a distance of three feet, or with quartz mercury-vapour at one to two minutes, from the same distance. Children under 1 year are given relatively shorter exposures. Cases of idiosyncrasy occur and it is therefore necessary to estimate the response to initial exposures very carefully and to keep the cases under personal observation during the whole period of treatment. The mothers attend the lamps with the children and carry out the superintendent's timed instructions as to parts of body to be exposed. Exact records are kept at every stage.

At the Baird-street Reception House out-door cases of non-pulmonary tuberculosis are treated. The couches are adapted for lying exposure, and the periods of treatment are carefuly adjusted to the types of case. At Robroyston Hospital Dr. Kathleen Smith gave a lantern description of cases, some of which had shown striking improvement. In the treatment of pulmonary cases with rays, she said, the best test was the pulse-rate. If an increase of ten beats per minute under the rays did not subside within an hour after exposure, the dose had been too much. It was observed that the general condition grew better under the rays, but the local lung condition did not perceptibly improve. The treatment was to be regarded as "still a very doubtful business," and fixation methods were used as well as radiation.

THE

Lloyd Roberts Memorial Lecture

[SUMMARY]

ON

THE CANCER PROBLEM.

Delivered at the Manchester Royal Infirmary on Nov. 9th, 1926,

BY W. E. GYE, M.D. EDIN.,

PATHOLOGIST, MEDICAL RESEARCH COUNCIL'S FARM LABORATORIES, MILL HILL.

THE subject which I have chosen for the lecture is not entirely within the special field of medicine in which Lloyd Roberts was an acknowledged master, but my hope is that what I have to say will be of sufficient interest to make the lecture worthy of the occasion.

I shall begin by indicating at once my general viewpoint on the subject of cancer, and I cannot do better than quote a few words from the introductory note of the First Scientific Report of the Imperial Cancer Research Fund (1904):—

"The combined histological and clinical observations of the last 50 years have established the malignant new growths as a natural group related to each other by fundamental common attributes. The explanation of those common fundamental characters is bound up with the mode of origin of malignant new growths, and is the problem awaiting solution, to be followed by the specific explanation of individual variations as its natural corollary."

I do not know how far this would meet with general approval. There are some very distinguished pathologists who take the view that there is no common cause of the fundamental characters of new growths; to such the search for a cause of the disease is an irrational pursuit. This view I regard as simply obscurantist and so, perforce, I leave it to time and the progress of knowledge to decide the issue.

My task is to tell briefly the essential story of the attempts which have been made to solve the problem set out in the quotation above. Naturally I shall advocate my own views of the solution of the problem, but I am more anxious to show—and if I fail, the fault lies with me and not with the facts—that at least the problem has been defined and brought to a practical stage by the immense efforts of experimental pathologists during the last 25 years.

EARLY RECORDS OF EXPERIMENTAL CANCER.

The earliest record of cancer experiments goes back to 1775 when Peyrilhe attempted to transfer a human breast cancer to a dog. The experiment was a failure. It has been repeated, with variations, over and over again by numerous observers—by Dupuytren, by Langenbeck (1840), Lebert and Follin, Duplay and Cazin, &c.—and invariably without success. Roux and Metchnikoff, and also Jobling, have attempted to transfer human tumours to anthropoid apes and failed. All this early work has shown the impossibility of transferring human tumours to the lower animals. In 1889 Hanau described the first successful transplantation of a carcinoma within the same species. The tumour was of a rat and in structure was a squamous cell carcinoma. It was transplanted into two other rats and formed small nodules in both. Pfeiffer (1890) was successful in transferring a melanotic carcinoma of a mouse to other mice. v. Eiselsberg (1890) successfully transplanted a spindle cell sarcoma of a rat to another rat. Morau (1891) was the first, by the method of transplantation, to cultivate a tumour. He was able to maintain a carcinoma of a mouse for 17 generations over a period of three years by the inoculation of fragments of the tumour into other mice. Firket (1882) and Velich (1898) were successful in transplanting a spindle cell sarcoma and a subperiosteal sarcoma of the rat respectively.

These observations attracted but little attention, and it was not until Jensen, Loeb, and Borrel had turned their attention to them that the significance of such work began to be appreciated. The present era of experimental cancer research may be said to date from the publication of Jensen's paper in 1902. His work, which was carried out with a carcinoma of a mouse, confirmed the observations of the previous experimenters already mentioned, in showing that a malignant tumour can be transmitted indefinitely within the species in which the tumour arises. Further, Jensen was unable to find micro-organisms in the transplanted tumours, and described experiments in which was tested the resistance of the cancer cell to different agents. During the same period Loeb studied a cystic sarcoma of the thyroid of the rat and obtained results essentially similar to those obtained by Jensen. Borrel, working with a mouse carcinoma, added further confirmation.

UNIVERSALITY OF CANCER IN MAN AND ANIMALS.

It will have been observed that the animals used by the experimenters mentioned were rats and mice, and the question now arose as to the occurrence of true new growths in other species. In the First Scientific Report of the Imperial Cancer Research Fund a list is given of the animal tumours examined in the laboratories of the Fund during the year 1903. Tumours of the most varied histological kinds, sarcomata and carcinomata, of the following animals are mentioned: cow, dog, horse, sheep, pig, mouse, cat, hen, Indian parakeet, giant salamander, cod, gurnard, and trout. Since that time observations of pathologists throughout the world have established definitely the fact that new growths occur commonly in all the lower animals, both domesticated and wild. Cancer is not therefore a purely human disease and any explanation of cancer in man must also explain the phenomena presented by cancer in the lower animals. These observations are uncontested and are of fundamental importance; they rule out of account the all too frequent pronouncements that cancer is a disease of civilisation and can be abolished by a return to a "natural" mode of living—whatever that may mean.

In the literature of 20 years ago one may find papers in which doubt was thrown on the neoplastic nature of animal tumours, but the question has now been most thoroughly studied, and the opinion among those most competent to judge is that the animal tumours are true new growths. It is therefore no longer necessary to discuss the point at any length. It is sufficient to say that in mode of origin, in age-incidence, in clinical course, in mode of growth and infiltrative spread, and in the formation of metastases there are no differences between tumours of man and of animals. The same range of tumours, benign and malignant, is met with in animals, and it is with this material that the greater part of experimental studies have been carried on.

THE IMPLANTATION OF TUMOURS.

The method by which a tumour is transferred from one animal to another consists in the implantation, usually subcutaneously, of a fragment of the tumour by means of a trocar or a syringe. From the implanted fragment a new tumour arises. Is the new tumour produced by infecting the cells of the host or does it arise by multiplication of the cells implanted? This question was studied by Jensen by the following technique. A series of animals—mice—was inoculated, in the manner indicated, with a mouse carcinoma, and at regular intervals one of the inoculated mice was killed, the whole of the graft and surrounding tissues fixed and cut in serial sections. In this way the fate of the implanted cells could be followed. Jensen showed decisively for a carcinoma—and his results have been confirmed by numerous observers—that the daughter tumour is derived entirely from the cells of the implanted graft. The central portion of the graft dies but the peripheral cells live; the fate of the

implanted stroma of the graft is difficult to follow, but a new stroma is provided by the host and it is this which nourishes the rim of neoplastic cells of the implanted fragment. The process, then, is a true transplantation and not an infection. Loeb who, studied the same problem with a rat sarcoma was unable to come to a decided opinion. He inclined to the belief that the new tumour was derived partly from the malignant cells inoculated and partly by a process of infection, from the connective tissues of the host. This difference in finding, however, may be merely one of technique and depending upon the difficulty of recognising a malignant from a normal connective tissue cell. Wherever the cells of the implanted tumour are easily distinguished from the cells of the area in which the fragment is placed, the question at issue may be determined by early-stage examinations. The general result of an immense amount of investigation of this character has been to show that the inoculations of tumours are true transplantations, that the daughter tumours are derived from the cells of the original new growths, and that the inoculated animals merely act as a medium in which the cells proliferate. By losing sight of these fundamental facts and by regarding transplanted tumours as *new* growths cancer research has often been led into blind alleys.

Specificity of the Cancer Cell.

The failure of the earliest investigators of cancer to transfer the human disease to lower animals has been mentioned already. This failure probably played a large part in forming the opinion that cancer is essentially a human disease. But it was quickly shown by experimental research that the tumours of animals are transplantable only within the species in which they occur. Thus a dog tumour cannot be propagated in a cat or a cat tumour in a dog. In the light of the discoveries of experimental histologists this is easily understood. It has been shown that inoculations of tumours are transplantations and therefore it could not be expected that the cells of a dog, for example, would grow indefinitely in cats or any other species of animal than the dog. The cell of an animal carries the species specificity. There have been certain observations made which would appear to invalidate this conclusion. Murphy discovered that mammalian tumours can be grown in a developing chick embryo. This discovery has been confirmed by many observers, including myself. From a minute fragment of a mouse carcinoma a considerable amount of growth can be obtained, and the astonishing picture is obtained of mouse epithelial tissue growing rapidly around a stroma provided by the chick embryo, new blood-vessels in which course nucleated red cells penetrating the mass of growth.

The same phenomenon of heteroplastic growth can be obtained in mammals by inoculating a mouse sarcoma into new-born rats. The cells proliferate and form a large tumour which can again be transplanted into new-born rats. In this way it is possible to maintain a mouse sarcoma for several generations in rats. But such work has no real bearing on the cancer problem. The implanted cells *remain mouse cells* and the maintenance of the tumour for a few weeks or months in a series of new-born rats is merely a laboratory trick which leaves the main problem unaffected. Since daughter tumours are derived from the implanted tumour cells it follows that living cells must be inoculated in order to obtain a second tumour. With epithelial tissues this is obvious indeed; inoculations are usually made subcutaneously into the connective tissues and the formation of an epithelial daughter tumour could not be expected to occur from infection of connective tissue cells. It is, however, an experimental fact that when the cells of a tumour are killed, whether by heat or by drying, by means of antiseptics or by mechanical disintegration, the mass of dead material no longer possesses the power of giving rise to a tumour when it is inoculated into a suitable animal. Thus, coincident with the death of the tumour cell there disappears the power of inducing a daughter tumour. The fact fits exactly with the logical deductions from the histological analysis of the changes accompanying the processes of transplantation.

The Cancer Cell a Parasite.

Such beautiful interlocking of fact and deduction served to strengthen the already strong conviction that the tumour cell is itself, as it were, the parasite. Nothing, apparently, is separable from the malignant cell which can induce the formation of a new tumour, and the general opinion has been formed, and is now held almost as a dogma, that the malignant cell is one which, under the influence of many possible inciting causes, has assumed a character or quality which enables it to grow and divide steadily and persistently beyond the needs of the rest of the body. According to this view, the cell is a parasite itself. The position is most clearly indicated by the following facts. It is now possible by following the brilliant work of Yamagiwa and Ichikawa to induce tumours in rats and mice by repeated applications of tar to the skin or subcutaneous tissues. The tumours thus produced are typical new growths and behave in every respect like spontaneous tumours which are caused in some way which we do not yet understand. A tar tumour of a mouse—carcinoma or sarcoma—can be transferred by transplantation to other mice, but living cells are necessary for success. It cannot be successfully transplanted to a rat or to any other species of animal. It is as much an individual mouse tissue as a mouse is an individual mouse. In the same way a rat tar tumour can be transplanted successfully only to other rats and only by the inoculation of living cells. We thus arrive at the interesting position that one and the same irritant acting upon two species of animals will induce new growths in each species, but the new growth in each case is individual and particular to its own species. Clearly the extrinsic agent, the tar, has induced an intrinsic change in the cell. It is thus easy to understand why a microbic hypothesis of the origin of tumours is met with scepticism and indeed contempt. It would be strange were it otherwise. Nevertheless, I believe that these apparently conclusive facts merely conceal the truth.

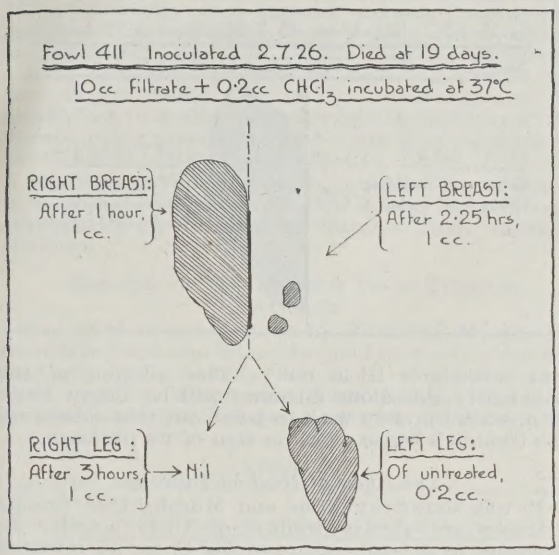
The Rous Fowl Tumour.

And now I come to the exceptions in all this mass of tumours. I refer to the well-known fowl tumours described by Peyton Rous. For the purpose of simplification I shall describe and discuss only one of these tumours, the first to be discovered and the one which is in the hands of pathologists all over the world. It is a spindle cell sarcoma, of primitive type, which occurred spontaneously in a Plymouth rock variety of the domestic fowl. The tumour was first described in 1910 when it was shown to be transplantable in the usual way but exhibiting an unusual degree of specificity for the variety of bird in which it originated. Indeed, the early transplantations were successful only in blood relations of the fowl which bore the spontaneous tumour. Now, after many years of artificial transplantation, the tumour grows in almost any variety of fowl but, like mammalian tumours, it retains its species specificity strictly. That is to say, it will not grow in pigeons, ducks, or any other species of bird, or in any mammal. Now this tumour was found by Peyton Rous to differ from all other tumours examined up to that time in being transferable to fowls not only by means of living cells but also by means of dried tumour tissue or by means of cell-free filtrates. The cell-free filtrates, therefore, contain the tumour's "cause." And, most surprising fact of all, the filtrate is infective only for fowls and causes the reproduction invariably of exactly the same kind of tumour—a spindle cell sarcoma. Thus the agent derived from the tumour cells has the power of exciting the formation again of a new tumour by transforming the normal connective tissue cell of the fowl into malignant cells, and this power is exerted only in one species. It is easy

to believe in the specificity of animal cells, but here apparently the specificity is freed from the cells and is obtained in solution—or at least it passes through a filter.

Of such tumours half a dozen or so have been described; but it does not matter much whether

CHART 1.



the number be half a dozen or half a hundred; the problem to be faced is the same and is challenging to all of us. Before trying to make clear what I conceive to be the problem I will state and discuss briefly the essential facts upon which there is general agreement.

The Rous Tumour a True New Growth.

First, the tumour is a true new growth as judged by the most rigid standards; secondly, filtrates through candles which hold back very small bacteria are able to induce sarcoma formation; and thirdly, some of the properties of the filterable agent are those which we usually associate with living organisms.

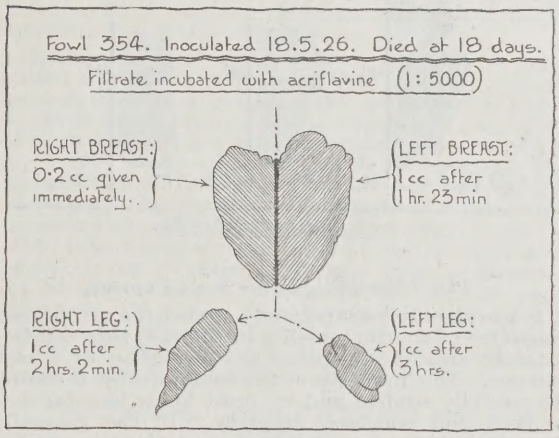
The general reaction to the discovery of these tumours was one of surprise that such a tumour should exist, followed by a half-hearted denial of the neoplastic nature of the growth. To-day most pathologists who have studied the tumour agree as to its neoplastic nature. There exists, however, an unwillingness to consider seriously the possibility of the filterable agent being an ultra-microscopic microbe such as we believe exists in certain animal diseases. Some of the more absurd explanations of the peculiarity of this tumour I will simply mention. It has been suggested that the filtrate of the tumour contains an ultramicroscopic cell which, when injected into the muscle of a fowl, enlarges and becomes a normal cell from which the new tumour forms. A modification of this view which has been put forward is that the active filtrate contains a part of the cell from which the normal cell can again regenerate. Such views, I hope, need no reply. They are stated merely to indicate the extremes to which men will go to explain away a fact which runs counter to a strongly held opinion.

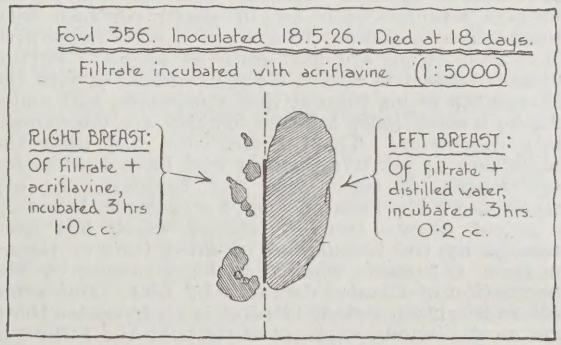
Rous and his collaborators in their long researches into the filterable tumours came to the opinion that the balance of evidence was in favour of the agent being a living, filterable micro-organism. Now what is the evidence that such things exist at all? If we take the classical example, and the first discovered, of an animal disease believed to be caused by a filterable virus we shall consider foot-and-mouth disease.

The current belief that foot-and-mouth disease is caused by a filterable virus is founded upon the following evidence. When the vesicular fluid of a lesion in this disease is diluted and filtered through a good candle, and the filtrate injected into a normal animal, this animal acquires the typical signs and symptoms of the disease. The vesicular fluid obtained from the second case may again be diluted and filtered, and once again the filtrate will reproduce foot-and-mouth disease; and so on ad infinitum. The filtrate when examined by ordinary microscopic and cultural methods is sterile, but since the causal agent reproduces itself indefinitely in the bodies of the inoculated animals it must be a living thing and it is, as we have seen, of ultramicroscopic size. Upon this evidence almost all bacteriologists believe that the cause of foot-and-mouth disease is an ultra-microscopic microbe. The evidence produced by Peyton Rous with regard to the filterable tumours was of the same kind and quality and is now more extensive. But opinion against a microbic cause of tumours is strong and few are prepared to accept for tumours conclusions which, on similar evidence, are unquestioned in other fields of medicine.

Let me now state the problem which is before all of us. Thousands of tumours of men and animals have been studied. Large numbers have been cultivated by transplantations. A considerable number of tumours have been induced de novo by means of chemical and other irritants and have been carefully studied. Almost all attempts to find an extrinsic cause—or a cause separable from the cells

CHART 2.


Fowl 354. Inoculated 18.5.26. Died at 18 days.
Filtrate incubated with acriflavine (1:5000)
RIGHT BREAST:
0·2 cc given immediately.
LEFT BREAST:
1 cc after 1 hr. 23 min
RIGHT LEG:
1 cc after 2 hrs. 2 min.
LEFT LEG:
1 cc after 3 hrs.

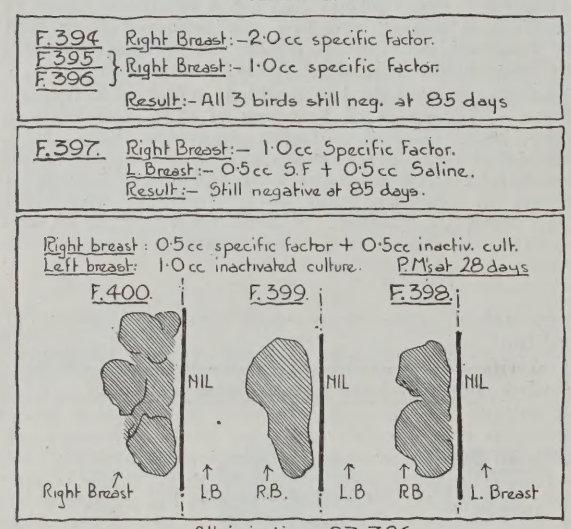

Fowl 356. Inoculated 18.5.26. Died at 18 days.
Filtrate incubated with acriflavine (1:5000)
RIGHT BREAST:
Of filtrate + acriflavine, incubated 3 hrs
1·0 cc.
LEFT BREAST:
Of filtrate + distilled water, incubated 3 hrs.
0·2 cc.

—have failed. But to about half a dozen tumours, of various histological kinds, a cause, a filterable virus, separable from cells has been found. How shall we look upon this astonishing difference? We may regard the filterable tumours as a disease sui generis unrelated to other tumours; in this way we must suppose that a filterable virus plays a part in the causation of certain tumours which is comparable to the part played by tar or soot in others. This attitude to the problem has been general, but I think that it is a mere evasion of a very real difficulty. The problem exposed by the work of

Rous does not consist solely in the isolation and cultivation of a virus. The true explanation of these tumours must in the first place decide whether or not a virus is present; and in the second place, equally important from the point of view of the cancer problem, must give us some understanding of the extraordinary specific character of active filtrates.

For my part I agree most emphatically with Rous, Murphy, and Tytler that "the findings with the chicken tumours largely demolish the theoretical basis on which objections to an extrinsic cause for cancer have been built up." But can these positive findings of Rous be reconciled with the negative results of similar experiments made with the majority of other tumours? I think they can.

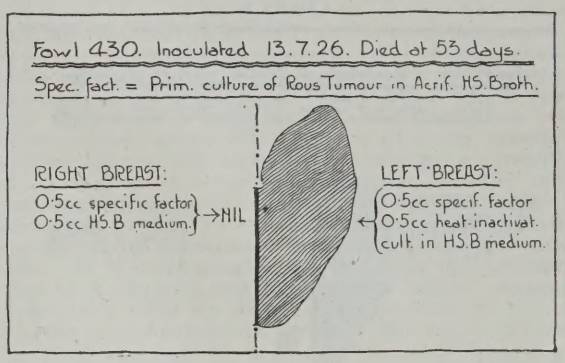
CHART 3.



The Filterability of the Rous Tumour.

It has already been pointed out that the exceptional character of the tumour lies in the fact that cell-free extracts are able to cause the formation of a new tumour. This property of the tumour must therefore be carefully studied and we must know how far it is a fixed and constant property. It has generally been looked upon as constant, and the tumour has on this account been set in sharp contrast with mammalian tumours. This is not in accordance with the facts; they are not quite so simple. Peyton Rous remarked in one of his papers dealing with the filterability of his tumour that sometimes, and under the best conditions, cell-free filtrates are unaccountably innocuous. That, I am sure, has been the experience of all investigators who have worked for any length of time with the tumour. In my experience it has been unusual, for example, to obtain a potent filtrate from a tumour which has been induced by the inoculation of dried tumour tissue, or from a tumour which has been caused by the inoculation of filtrates damaged by heat. But when failure to obtain potent filtrates is an irregular thing the most obvious explanation is that the failure is caused by some technical difficulty. Filtration is not a simple, regular process and it is easy to understand irregular qualities of filtrates. But it has now been shown that technical difficulties cannot fully explain such failures. Dr. Andrews and myself have described how a Rous tumour lost its property of filterability and how this property remained absent for more than five months and then suddenly reappeared. During this long period the tumour was transplantable only by means of living cells—that is, it behaved like the recognised tumours of mammals. Clearly, then, this property of filterability is not fixed; all we can say is that generally a filtrate of the tumour is active—sometimes feebly, sometimes intensely; often it is quite inert. And since it has generally been accepted that a potent cell-free filtrate contains the tumour's cause, are we then to say that sometimes the cause is present in the filtrates

CHART 4.

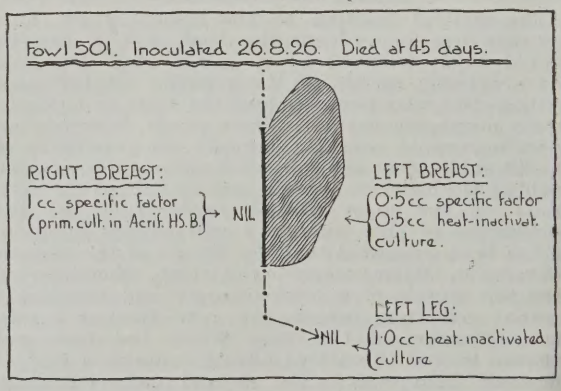

Fowl 430. Inoculated 13.7.26. Died at 53 days.
Spec. fact. = Prim. culture of Rous Tumour in Acrif. HS. Broth.
RIGHT BREAST:
0·5cc specific factor
0·5cc HS.B medium.
NIL
LEFT BREAST:
0·5cc specif. factor
0·5cc heat-inactivat.
cult. in HS.B medium.

and sometimes it is not? The solution of this apparently ridiculous dilemma will be shown later; at present I merely wish to point out that sometimes the tumour's cause gives no sign of its presence.

The Effect of Heat on Filtrates.

It was shown by Rous and Murphy that tumour extracts are always robbed of their activity by exposure to a temperature of 55° C. for 15 minutes. This statement I can confirm completely. It has been tested very carefully and the method employed is as follows. Not more than 3 c.cm. of the tumour extract is sealed up in a *thin-walled*, hard glass test-tube which is then attached to the bulb of a standard thermometer and completely immersed in a water-bath kept at 55° C. The thermometer and attached tube are shaken gently during the period of heating. Tested in this way, tumour extracts, whatever their initial potency, are invariably inactivated. Rous and Murphy regarded this result

CHART 5.



as evidence that the causative agent of the tumour had been destroyed; and, of course, it looks very like it. Whatever the agent is that is destroyed in such a short time at 55° C. it is evidently very sensitive to heat, and judging by the thermal death points of other viruses, it is not likely to be a virus. This view is supported by a study of the effect of lower temperatures than 55° C. upon a series of filtrates of tumours. A filtrate, usually through a Mandler candle, was made from all the routine tumours obtained during a period of more than six months—in all more than 40 tumours. Each filtrate was tested at temperatures from 45° to 55° C., variations being made from time to time. During the period chosen, the tumour was not very malignant and as

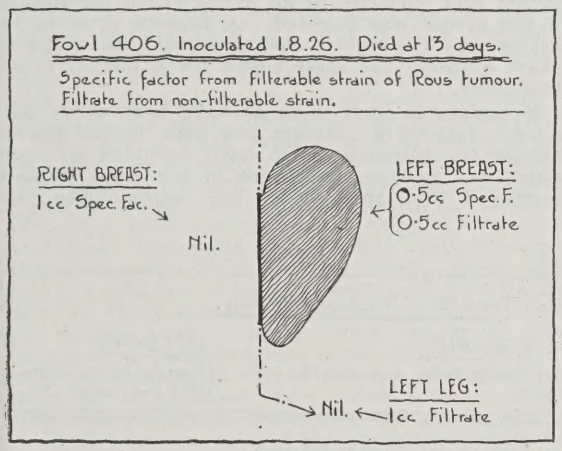
malignancy and activity of filtrates run parallel with one another, the filtrates were not very potent. In a few tests made it was found that 0·5 c.cm. of Mandler filtrate was barely sufficient to induce a new tumour; 2 c.cm. was in each case adequate. All the samples of such filtrates were inactivated by exposure to 55° C. for 15 minutes; often 50° C., and sometimes 45° C. for 15 minutes was sufficient. When suddenly the tumour became exceedingly malignant, metastasising freely in liver, lungs, spleen, and elsewhere, and the filtrate became exceedingly active, inducing tumours in doses of 0·001 c.cm., then it was found that 54° C. for 15 minutes was insufficient to destroy all activity—the activity of the filtrate being merely reduced—but that exposure to 55° C. for 15 minutes was effective.

It is evident from this experience that the substance in the filtrate which is sensitive to heat is variable in amount or in quality in filtrates from different tumours.

Effects of Antiseptics upon Tumour Extracts.

One of the reasons given by Rous and Murphy for their belief that the filterable agent may be a virus was that antiseptics destroy the agent. It is only fair to state that Dr. Murphy has since changed his mind; he now thinks that it is unnecessary to assume a virus.

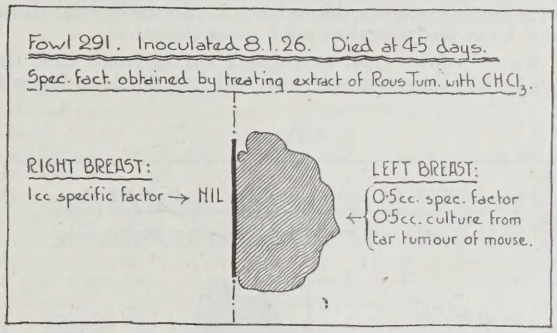
Chart 6.



His opinion of 1912 seems to me to be sounder than his opinion of 1926. Carbolic acid, corrosive sublimate, toluene, chloroform and ether, hydrogen peroxide, formalin, acriflavine, and hydrocyanic acid are some of the antiseptics which have been tested and they are all effective, each in its own way, in abolishing the activity of tumour extracts. I shall describe briefly the effects of two only of these substances—namely, chloroform and acriflavine.

Chloroform acts very rapidly at incubator temperature. This is shown very clearly in Chart 1. which represents the effect of 0·2 c.cm. chloroform on 10 c.cm. of clear, cell-free, sand filtrate of a very malignant Rous sarcoma. The mixture of filtrate and chloroform was incubated in a large, hard glass tube in a water-bath at 37° C. After incubation for one hour a sample was removed, the chloroform pumped off, and 1 c.cm. then inoculated intramuscularly into the right breast of Bird 411; after two and a quarter hours a second sample was inoculated in a dose of 1 c.cm. into the left breast of the same bird; and after three hours 1 c.cm. was inoculated into the right leg of the bird. The control in this experiment was provided by incubating 10 c.cm. of the filtrate, contained in a hard glass tube, for three hours in the same water-bath; of this incubated extract 0·2 c.cm. was inoculated into the left leg of Bird 411. It is shown by this experiment that in two and a quarter hours the activity of the filtrate has been enormously diminished by the chloroform, in three hours abolished. But since the fowl died in 19 days it might be argued that there was not sufficient time allowed for the dose of filtrate treated with chloroform for the full three hours to manifest its activity. To provide against such a source of error a second fowl was inoculated with 2 c.cm. of such extract; in four months it has not developed a tumour. Thus chloroform acts very rapidly. This, however, applies

Chart 7.


Fowl 291. Inoculated 8.1.26. Died at 45 days.
Spec. fact. obtained by treating extract of Rous Tum. with $CHCl_3$.
RIGHT BREAST:
1cc specific factor → NIL
LEFT BREAST:
0·5cc. spec. factor
0·5cc. culture from
tar tumour of mouse.

only to the ordinary impure chloroform used for common purposes in laboratories. When pure chloroform is used the action is much slower. I am indebted to Dr. Howard Mueller, of Harvard, for the intimation that this might be so.

Acriflavine acts slowly. The experiment represented by Chart 2 illustrates this very well. It will be seen from this that 1 in 5000 acriflavine is unable in three hours to abolish the activity of an extract of a tumour. When such experiments are carried on for longer times—e.g., six hours—it is found that the activity is further diminished but not entirely abolished. In order to inactivate a filtrate it is necessary to incubate the mixture overnight and this often introduces a complication; simple incubation at 37° C. for 18 hours frequently robs a filtrate of its powers to induce tumour formation. In order, therefore, to utilise the action of acriflavine in experiments of an analytical character it is necessary to devise other methods, the details of which are omitted here for the sake of clarity.[1]

Two Factors: both Necessary for Cell Infection.

We know that filtrates of the Rous tumour can be inactivated by heat and by antiseptics. By means of experiments such as the following (Chart 3) it can be shown that the element destroyed by heat is not the same as that destroyed by acriflavine. The experiment illustrated shows that a tumour extract treated with acriflavine was quite inactive; an extract of the same tumour heated to 55°–56° C. for 18 minutes was also inactive. The two inactive fluids when mixed together acquired the power of inducing tumour formation.

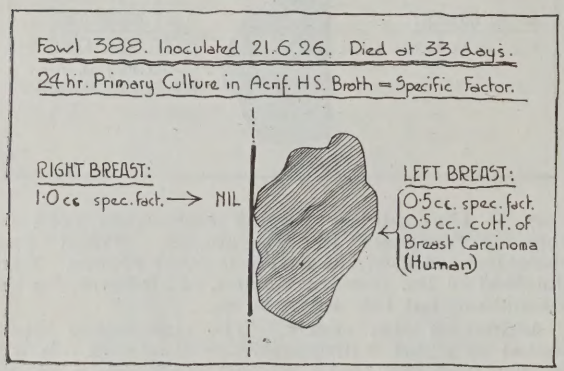
The only criticism which can be passed upon experiments of this kind is that the chickens inoculated with acriflavine treated extract happen to be naturally resistant, whereas the others were sensitive. This criticism, however, is not sound. The percentage of resistant birds cannot be determined absolutely, but it is, in any case, very small. Moreover, resistance is a graded quality. When the infective fluid is intensely active it is very rare to find a chicken resistant to its action. Only when the fluids which are inoculated are on the border-line of infectivity does one reveal differences in sensitiveness among any batch of chickens. The criticism, in any case, cannot apply to the next series of experiments. which are illustrated in Charts 4 and 5.

[1] The details and protocols of these researches will appear in a series of papers in the British Journal of Experimental Pathology.

In these experiments the same bird is used as control to the experiment. In the first experiment (Chart 4), the dose of acriflavine treated tumour extract is the same in both breasts; the only difference between the two sides is that in the right breast the diluent is horse serum broth medium, while in the left breast it is heat inactivated extract of tumour. The quantities in such experiments as this are measured with the most scrupulous exactitude. In the experiments represented by Chart 5, the controls, both of heat inactivated and antiseptic inactivated extracts are included on the same bird. Similar experiments, with similar results, have been made with chloroform and with hydrocyanic acid as antiseptics.

From results such as these I am satisfied that the production of a tumour with cell-free filtrates depends

CHART 8.


Fowl 388. Inoculated 21.6.26. Died at 33 days.
24 hr. Primary Culture in Acrif. H.S. Broth = Specific Factor.
RIGHT BREAST:
1·0 cc spec. fact. → NIL
LEFT BREAST:
0·5 cc. spec. fact.
0·5 cc. cutt. of Breast Carcinoma (Human)

upon the conjoint action of two elements of the filtrate. One of these is rendered inactive by acriflavine or other antiseptic and is therefore presumably a micro-organism; the other is readily inactivated by heat. As we have seen, it would appear probable that the agent which is destroyed by heat is variable in quantity (or in quality) in filtrates from different tumours. Chart 6, which illustrates eight similar experiments, shows that innocuous filtrates (i.e., filtrates from a "non-filterable" Rous tumour) have the same property of reactivating acriflavine inactivated extracts as have extracts which have been heated to 55° C. for 15 minutes. It follows that inert filtrates are simply filtrates which contain none, or an insufficient amount, of this heat-sensitive but absolutely essential factor. This factor, which I have named the "specific factor," for reasons which will appear later, may be present in variable amount, and it is only because of its activity that the presence of a virus can be shown in the Rous sarcoma. When it is absent the Rous sarcoma, like the average bird and mammalian tumours, cannot reveal its "cause." The peculiarity of the Rous tumour is that it manufactures in varying degree this accessory thermolabile substance.

It is evident from these experiments that the agent which is destroyed by antiseptics (the virus) is unable, acting alone, to induce sarcoma formation. This fact appears to me to be very simple. It has its analogies in general bacteriology where the phenomena are most widely known and appreciated. But the fact, when established in research connected with the subject of cancer, is apparently regarded as a diabolical mystification of a plan and straightforward problem. It is but right to state here that Prof. Borrel, the pioneer of experimental cancer research, has for 20 years held the opinion, on general grounds, that the essential cause of tumours is a virus which requires prolonged preparatory irritation of the tissues before its latent powers can be manifested.

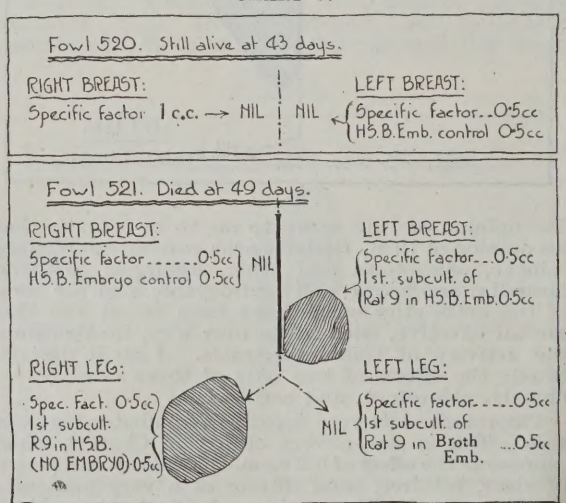
The use of the word "cause" in medicine is unfortunate and is always liable to misapprehension. What is generally understood by the word is, I assume, a factor which must be invariably present in the ætiology of a disease. We cannot, if this be the meaning understood, regard the specific factor as the cause of the Rous sarcoma because it is sometimes absent. The virus—i.e., the element which may be destroyed by an antiseptic—is, so far as my experiments show, always present in the tumour whether the tumour be very malignant or relatively benign. I regard the virus, therefore, as the cause of the sarcoma. Which of these two characters carries the specificity?

SUBSTITUTION EXPERIMENTS.

If an extract of the Rous fowl sarcoma be inactivated by heat and then there be added to it an extract of another tumour, the mixture does not induce sarcoma formation in the fowl or in the animal from which the second tumour was obtained. That is, a heat inactivated extract of the Rous sarcoma cannot be restored to activity by the addition of simple extract of a rat or mouse tumour. But when an extract of a Rous sarcoma is inactivated by means of an antiseptic or by centrifugation, the activity can be restored by the addition of extracts of some other tumours. Chart 7 shows this very clearly. In this experiment the fowl sarcoma filtrate was treated with chloroform, the chloroform removed, and 1 c.cm. of the filtrate was then injected into the right breast of a fowl. Into the left breast of the same animal a mixture of 0·5 c.cm. of this chloroform inactivated filtrate and 0·5 c.cm. of an extract of a tar tumour of the mouse was injected. A tumour grew in the left breast; the right breast remained quite negative. Chart 8 shows the same result for a human breast carcinoma.

Experiments such as these have been made with a large variety of tumours and with normal tissues. Among the tumours which have provided an agent which can replace that agent of the Rous sarcoma destroyed by antiseptics are carcinomata and

CHART 9.



sarcomata, both of man and animals. Normal tissues which have been tested are: embryonic tissues (chick, mouse, rat) more than 150 times; adult tissues of animals, including heart, lungs, muscle, brain, liver, and kidneys—and in one instance, normal human uterus. Not once has it been possible with extracts of such normal tissues to replace the agent destroyed by antiseptic in the fowl sarcoma extract.

My interpretation of such experiments is as follows. In the experiment represented by Chart 8, for example, acriflavine has destroyed in the Rous

tumour extract a micro-organism; this interpretation is in accordance with the well-known antiseptic action of acriflavine. The extract of mammary carcinoma has, as I conceive it, provided a fresh supply of organisms which are able, in virtue of the presence of a sufficient amount of accessory factor of the fowl tumour, to infect the cells of the fowl inoculated.

These experiments show very clearly that the specificity of the Rous tumour extract is carried by the heat-labile agent which has, for this reason, been called the "specific factor." It has already been pointed out that extracts of normal tissues do not provide the agent which reactivates antiseptic treated extracts of the Rous sarcoma. But certain tumours, one of which is a sarcoma of the mouse, have so far invariably failed also. This is one of the most puzzling facts yet met with and I have no explanation which accounts for it satisfactorily. The evidence that the agent which is extractable from many bird and mammalian tumours and which has the power of restoring activity to inactive extracts of the Rous tumour is a micro-organism is as follows: first, the agent is killed by antiseptics, and, secondly, it can be cultivated. The proof of cultivation is obtained by the method described in a recent publication—namely, by using as a medium serum broth to which is added a fragment of embryonic tissue. Chart 9 shows the method of experimentation adopted. Acriflavine treated extract of Rous sarcoma is prepared; to measured portions of this are added in series, (1) a sample of serum broth embryo culture medium, (2) a sample of a subculture in the same medium, and (3) samples of a subculture in different media. Quantities are measured precisely. The result of the experiment represented by Chart 9 shows that the agent from a rat carcinoma survived in horse serum broth embryo and in horse serum broth, but not in broth embryo; it was not present in the horse serum broth control-tube which has been incubated for the same period of time as the cultures. Continuing with subcultures in this way tumours have been obtained with remote—seventh—subcultures in media which contain embryo tissue. But there is a criticism which has been applied, and quite fairly, to these results. It is that possibly we are here dealing with a phenomenon similar to that discovered by Twort and now known as the "bacteriophage phenomenon." It is possible to argue that successive inoculations into tubes which contain living embryo induce repeatedly the production of the agent from the cells of the embryonic fragment. This is not impossible but it is very improbable. It must, of course, be settled before the last element of doubt has been removed.

Conclusions.

Does this new knowledge bring us any nearer to the solution of the problem set forth at the beginning of this lecture? And, further, is the answer compatible with the known facts of cancer structure and behaviour? It seems to me, after considering the problem very thoroughly—and I hope with a sound knowledge of the accepted facts—that in the first place there is no incompatibility between new and old "fact"; and in the second place it shows that there is an agent contained in tumours of diverse origin and of diverse structure which has the supremely important property of reactivating an extract of the Rous sarcoma which has been inactivated by means of an antiseptic. The tumours in this respect are therefore linked together in a way which had never before been suspected; they are indeed a natural group. The agent which is common to these and which links them together in a group, is killed by antiseptics and can be cultivated. Moreover, under special conditions it can be seen and photographed, as has been shown by my friend and colleague, Mr. Barnard. I am satisfied that the simplest explanation of these observations is the correct one—namely, that the agent is a living, filterable microbe and that it is the cause of new growths.

Bradshaw Lecture

ON THE

THEORY OF DIAGNOSIS.

Delivered before the Royal College of Physicians of London on Nov. 4th, 1926,

BY F. G. CROOKSHANK, M.D., F.R.C.P. LOND.,
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PART II.*

THE full importance of the distinction between natural and conventional diagnosticians is only appreciated when medicine is studied in respect of the parallelism that Saucerotte said has ever existed between the history of medicine and that of philosophy—a parallelism that needs no explanation when we realise that, whether in medicine or philosophy, there are two routes by which the human mind has always sought to attain its goal. These routes—those of the sensualist or empirist, and of the Platonist or rationalist—are those followed respectively by the two schools of diagnosis—the natural, or descriptive, and the conventional, or academic—that I have tried to indicate. For the better estimation of our present position, two *points de repère* in the duplex history of medicine and philosophy may be taken: the first, the controversy between Coan and Cnidian in the the fifth century before Christ; the second, the rivalry between Hippocratists and Galenists during the sixteenth century afterwards.

Coans and Cnidians.

It has been said by Boinet that the rival schools of Cos and Cnidus stand for "les deux grandes idées doctrinales qui reviennent sans cesse à travers les siècles après de longs détours et avec des fortunes diverses," and Daremberg, with equal justice, declared that in the Coan writings we find discussion of the organism and of disease; in the Cnidian scriptures that of organs and of diseases. That these differences are essentially *diagnostic* was implied by Littré when he said that the Coans studied the general state that the outcome might be foretold, whereas the Cnidians were more concerned with the diversity of diseases and the distinctions between them.

But it is from the few undisputed writings of Hippocrates the Great that we derive the clearest notion of the Coan diagnosis whereby, after full examination of all relevant detail, related phenomena were simply interpreted in the light of past experience, the resultant judgments being expressed descriptively yet concisely without the confusion arising from the hypostatisation of abstracts and the utraquistic use of names. The classical passage is that in the "First Epidemics," where, speaking of a certain epidemic prevalence, Hippocrates says that he framed his judgments or *diagnosed* by paying attention to what was common to every and particular to each case; to the patient, the prescriber, and the prescription; to the epidemic constitution generally, and in its local mood; to the habits of life and occupation of each patient; to his speech, conduct, silences, thoughts, sleep, wakefulness, and dreams—their content and incidence; to his pickings and scratchings, tears, stools, urine, spit, and vomit; to earlier and later forms of illness during the same prevalence; to critical or fatal determinations; to sweat, chill, rigor, hiccup, sneezing, breathing, belching; to passage of wind, silently or with noise; to bleedings; and to piles.

Here, in a fashion that shows at once the strength and the weakness of *natural* diagnosis, we are given an epitome of what the physician who takes cognisance of the epidemiological as well as the clinical relations

* Part I. appeared in THE LANCET last week.

of a fever must observe. That, to the Coan, judgments were particular for each case, and that general conditions such as fever, and local conditions such as peripneumonia, were mentioned descriptively without linguistic suggestion of attack by any entity or of participation in the "secondary substance" of some scholastic reality—much as when a French physician of to-day says his patient has "a pneumonia" or "a meningitis"—is shown when, in the last sentences of the "Prognostics," Hippocrates begs the reader not to regret the omission of the name of any particular disease, since it is by study of symptoms in each case rather than from accounts of named diseases that the desired knowledge is gotten. A similar diagnostic method is exhibited in the Hippocratic essay on "Wounds of the Head," and is generally employed by surgeons when dealing with injuries.

What we know concerning the Cnidian diagnosis comes in part from the Hippocratic essay upon "Regimen in Acute Diseases," and in part from Galen, in his "Commentary" thereon, and elsewhere. Just as the Coans saw the essential unity of all disease whilst admitting the multitudinous presentations thereof in accordance with personal and environmental singularities, so the Cnidians, in Adams' words, overstrained diagnosis to a system that divided and subdivided diseases into endless varieties or species. For the Cnidians, as for all *conventional* diagnosticians, the aim was not the assay of the patient's state, but the identification of his malady with a standardised ideal.

Since method in therapeusis waits always upon method in diagnosis, Hippocrates differed from the Cnidians, as he said, whenever they interpreted symptoms with a view to determining right treatment: the burden of the "Regimen" is that *he* sought to treat each patient individually and symptomatically; the Cnidians the disease, specifically and rationally. By the Coans every effort was made to "assist nature," to reintegrate the functional unity of the organism that Sigaud finds dissociated in all disease, and to "diagnose"—the translation is literal—

> "to diagnose the asthenias that occur during illness, whether caused by lack of food or other harm, by pain, or the severity of the malady . . . for through knowledge of such things comes safety: through ignorance thereof, death."

But the Cnidians employed those remedies which reason led the physician to deem efficacious in respect of the nominated disease. These differences in practice, however, like those in diagnostic method, flow naturally and consequently from the fundamental psychological differences between two schools, of which one conforms to the natural or direct method of thought and interpretation, and the other to the conventional or indirect and abstract habit. These are rather naïvely indicated by Neuberger when, in sentences that evade the real question, he blames the Cnidians for making "fictitious types of disease founded upon unessential characteristics" and the Coans for their "fusion of clinical entities both pathologically and etiologically distinct."

The cleavage is, indeed, that between those to whom types or universals are of no greater importance than their names, or are at most but shadowy imaginings, and those to whom even the names of such types are something more than mental conveniences, algebraical symbols, or book-keeping fictions, and are representative of *realities*, in a Platonic if not a material sense. Indeed, we are forced to agree with Galen when he said so wisely and so wittily, in his essay "Upon some Tenets of Hippocrates and Plato," that, in the greatest number of cases, cleavage of opinion comes from the failure to distinguish between the particular and the general, "such being the source of disagreement between physicians in respect of the use of barley-water"—a hit at the Coans and Cnidians, this—"and between philosophers concerning the virtues of the soul." Had he lived to-day, he would have said that this failure constitutes also an obstacle to the instruction of the public in matters of personal health, otherwise than in relation to personal diagnosis!

Incidentally, it is of interest that Taylor, who finds the most significant examples of the Platonic usage of the words *idea*, *eidos*, in just those parts of the Hippocratic collection now regarded as Cnidian, should also trace in the Cnidian writings the influence of that Pythagorean school that allied an early form of Platonism to a philosophy of numbers. To-day there are no more stubborn Cnidians than those statisticians who repose their strange belief in numbers upon a realism that allows them to fancy statistical combinations to be something else than patterns of symbols, and statistical results to possess a value that renders inquiry into the original data otiose, if not mischievous.

HIPPOCRATISTS AND GALENISTS.

If the difficulties between Cos and Cnidus, no less than those with which Galen was so greatly concerned between the empirics and the dogmatics, were indeed, as Littré says, a struggle between the fact and the generalisation, or the particular and the general; the essay "Upon some Tenets of Hippocrates and Plato," in which the question of the One and the Many is dealt with in all its obscure profundity, is remarkable as indicating not only Galen's ambition to act as conciliator in respect of the fundamental problem of diagnosis, but his partial breakaway from Coan medicine, and his increasing tendencies to Platonism, as when he declares that Hippocrates wrote confusedly in respect of *genera* and *species*.

His conventionalising tendency is again marked when he approves the saying of Erasistratus that to diagnose is to answer the question: Where and what is the disease? (8–14). So, too, when in the "Commentary" upon the "Regimen" he insists that he alone who knows the constitution of the sick *and* the nature of the disease will be able to devise rationally the remedy. Again, and above all, when, to the four Aristotelian causes—the formal, material, efficient, and final—he adds one more, the typical, or exemplary, by virtue of which the particular, or instance, conforms to the universal, or type. Implicit acceptance of the exemplary cause permeates all modern conventional diagnosis and justifies the notification to public authorities of cases of those diseases which, called into existence by decree from Whitehall, are, in the words of Galen himself, followed by the symptoms as is the substance by the shadow.

It is in virtue of this Platonism that Galen, in spite of his professed devotion to the memory of Hippocrates, became in the sixteenth century century throughout Europe, but notably at Paris, the eponymous head of that party which opposed itself to the less organised body of Hippocratist physicians when was renewed, at the turning point of modern history, the controversy that I have spoken of as that between Cos and Cnidus. If we may consider Guillaume de Baillou (1538–1616), to whom our epidemiologists (and Sydenham not least) owe all, to have been the greatest figure amongst the French Hippocratists, perhaps his master Fernel (1497–1558), who first measured a degree of the meridian, is to be reckoned the greatest of the Galenists. However much Fernel differed from Galen in detail, he, a conventionalist through and through, was never more Galenist than when he tried to shepherd the jarring sects within the fold of his Ramist philosophy and logic. For him a disease was an *affectus*, or *diathesis*, *contra naturam*, and with local or general incidence. Our contemporary systemisers betray his influence in every sentence that they write.

Those who read Baillou and Fernel must agree with Wickersheimer that Le Clerc's epigram, founding the Hippocratic system upon experience and the Galenical upon ratiocination, is absolutely true when applied to the Hippocratists and Galenists of the Renaissance, between whom the difference was less one of doctrine than of method. That is to say, it was one between natural diagnosis in terms of experience, and conventional diagnosis in terms of reasoning. The philosophical difference — fundamentally that which

separated Cos from Cnidus, empiric from dogmatic, and lately occupied some portion of our morning papers in the guise of a discussion at the Oxford meeting of the British Association concerning the nature of species—appears at this time as the aftermath of the mediæval dispute between nominalists and realists which, initiated by the questioned interpretation of a passage in Porphyry's "Isagoge," turned upon the formal query whether or no universals, or *genera* and *species*, have any existence otherwise than in our thoughts.

The scholastic realism that answered this question affirmatively, hypostatising general ideas and holding that in the universals alone is there substantial reality, while standing in line of descent from the early Platonism of Cnidian philosophy and medicine, and the late Platonism of Galen's philosophy and medicine, survives to-day in the obstinate creed of those who profess the belief in clinical entities against which the late Sir Clifford Allbutt fought so long, so ably, and so vigorously.

It carries with it the implication that such *species* as described diseases obey an ascertainable rational necessity and are more than subjective interpretations, being so determined by the nature of things as to be theoretically susceptible of categorical exhaustion by enumeration. Since, even in 1473, until shortly before the birth of Fernel, all professors of the University of Paris had been compelled to take oath to teach only this realism and to abjure all contrary doctrines, it is not difficult to understand the still dominant influence of Galenism in the Faculty of Medicine 50 years later.

The opposed view of the nominalists implied that the name of a universal is but a *flatus vocis*, corresponding to no *ens*, or entity, and that *species* and *genera* are mere names. Since the germs of nominalism are clear in all Coan writings, it is not surprising to find the works of Baillou permeated with the true spirit of the nominalist philosopher and natural diagnostician who seeks eagerly for experience and its synthesis but who distrusts all systemisation and all hypostatisation of abstractions. But, since the philosophical position of those who, at the time of the Renaissance, upheld the doctrines of the Trinity and of the Real Presence, even to extremity, was derived from scholastic realism, whilst nominalism was combated with so much bitterness because of its supposed inconsistency with these dogmas, we may truly say that the diagnostic or methodic issue between the sixteenth century Hippocratists and Galenists relates to the same fundamental ground of difference as that which divided Aristotle from Plato, and, at the time of which I now speak, split the Western Christian church to its foundations.

Clinicians and Systemisers.

With the ultimate discard of Galenism the cleavage between the man who describes a case and him who writes about a disease becomes that, less obvious but still marked, between the clinician and the systemiser: of systemisers, the seventeenth, eighteenth, and nineteenth centuries saw in turn those who made use of chemical, mechanical, botanical, mathematical, organicist, and bacteriological conventions. The schism still persists, though masked by the transference of teaching from the lecture-room and wards to the laboratory, and by the desuetude of reading, whilst at the same time, to-day as ever, every systemiser or conventional diagnostician claims to be a clinician who diagnoses in terms of experience—a compliment not reciprocated, since no true clinician ever claims to be a systemiser. True, system to-day is represented by a jig-saw of systems rather than by any defined pattern, but the existence of the schism is shown by a dissatisfaction which, though perhaps repressed into the collective unconscious of the profession, is yet seeking satisfaction, and is made manifest by a conversion into irresponsibility in thought that is as distressing as the formalism against which it revolts.

There is a feeling that the bald diagnostic convention, of so many definite diseases constituted by so many definite groups of physical signs correlated with so many definite groups of post-mortem appearances, is one that has had its day. So much is shown when doctors declare that there is increasing difficulty in referring cases to a diagnostic *cadre* and that "the type of disease must be changing," though the real ground for complaint should be that the abundance of our experience can no longer be dealt with by methods once adequate. Perhaps, too, we are less confident than formerly of the sufficiency of any affirmations. A few years ago many hoped that bacteriology would render all diagnosis easy, but, as Sir William Job Collins predicted in a brilliant essay, disappointment has come to us. No system of specific pathology has been achieved, and, in spite of great successes, the bacteriological method has cut across many of our most cherished pathological and clinical groupings, as in the matter of the colon bacillus and that of focal infections generally. Under these circumstances some, like Sir James Mackenzie, have reverted to a Hippocratic symptomatology, tempered by neo-methodism, and are undeterred by the wit of those who think it less excellent—almost less moral—to pay greater attention to symptoms than to signs and to diagnose in syndromes instead of in diseases.

Yet those who abash a student by asking him to show a syndrome or diathesis on a plate forget that a *disease* cannot be so shown and that even the Galenists—who did not specifically name throughout their whole range the diseases that were specifically determined for almost every case—recognised that, in order to deal adequately with experience, a whole apparatus of subsidiary devices was needed. So they called into being not only the *morbus*, but the *morbi causa*, the *affectus*, the *effectio*, the *affectio*, the *laesio*, the *symptomata*, and the *signa*. Our present redundance of experience, accumulated as a result of instrumental amplification of our perceptual range and of mechanical facilities for communication and storage, seems to urge us anew towards the devising of fresh conventions.

Already psycho-analysts such as Freud, Jung, and Adler, morphologists such as Arone, Thooris, and MacAuliffe, and characterisers such as Kretschmer and Draper—to say nothing of the endocrinologists—interpret cases, not in terms of diseases, but of personality-types sufficiently indicating the actual or expected reactions of the patient to any given situation. The danger is, however, lest in the absence of a theory of diagnosis new conventions should lead us back into conventionalism, if not realism. To think, as we often do, with concepts that we refuse to define, seems no better than for a carpenter to work with tools whose special uses he will not consider; and it is certainly true that synthetic advance is only made when the integral concepts are first defined, albeit provisionally. To make use of such conventions and concepts as are now being devised, without consideration of the general value of such concepts, is a proceeding that will lead not to fruitful synthesis, but to new and chill academics.

What we must first define, therefore, is the attitude we shall adopt in respect of the two schools of diagnosis: the natural, allied with nominalism; the conventional, allied with realism. We may then well inquire whether, if the philosophic battle be drawn, as perhaps it is, there is anything to be said, pragmatically, in favour of one side or the other! Natural diagnosticians—true clinicians—will, perhaps, always suffer by reason of the lesser fitness of their method for verbal communication. They teach by example rather than by the spoken or written word, and their reluctance to employ verbal symbols as handy labels is ill-comprehended even by those who appreciate results. Always striving towards the simplicity of synthesis, they do not separate disease from the man, or man from his environment. Hence their study of epidemics as illnesses of communities, their therapeutic utilisation of airs, waters, and places, and their insistence upon

personal effort, while causation is to them in each case an infinitely complex relation almost insusceptible of generalisation. *Per contra*, nature, to the natural diagnostician, may become less a subject of observation than an object of superstition, while distrust of classifications may beget mental untidiness; and the study of symptoms, clinical indecision and a neglect of origins, if not an expectancy that slips into fatalism.

But the conventional diagnostician, whatever the convention for which he plumps, if he enjoys all the advantages of the trader who, discarding barter and cash transactions, makes use of financial and currency fictions, runs also the risks of those who, from sheer habit, come to assign real value to their symbols as well as to their concepts. If his faith in specific diseases, with specific etiologies demonstrable by special tests and curable by specific remedies with specific actions, carries him through many a verbal emergency, yet, since this faith has no greater value than the premise upon which it depends—the metaphysical reality of *species* and *genera*—it may betray him at any moment, blinding him to alternative explanations that open up rich fields of experience, and so entangling him in the meshes of his own classifications and dogmas that, finally, in Bacon's words, he worships idols of the theatre. Indeed, just as the naturalist may become a nature worshipper, so may the conventionalist become a gnostic like Galen, or, since most quackery derives logically from realism, a devotee of some magic box.

In these circumstances, what is to be our decision? Shall we elect to remain, like Buridan's ass, halting between two opinions and starved in the literal midst of plenty? If not, must we resign to be, in Sir Clifford Allbutt's words, either treaters of types, fit only to be abstract physicians practising *in vacuo*, or mere empirists who, having but a vague notion of a type, treat the sick man item by item, not appreciating the relative values of the several phenomena of each morbid period? Is there no avenue of compromise or of reconciliation?

COMPROMISE AND RECONCILIATION.

The history of medicine has, perhaps, answered these questions in showing us that security and advance come through ordered balance rather than through unilateral supremacy. But we require some plan or scheme that, in a work-a-day world, will help us to carry on our daily task without losing touch with either side. The difficulty is how may we best relate for practical purposes the thing, the thought, and the name or symbol which, on the other hand, it is equally our duty to distinguish.

One scheme has been set out with great skill by Messrs. Ogden and Richards who, in the "Meaning of Meaning," have given us a theory and canons of symbolisation which it is hoped they will supplement by theories and canons of interpretation and observation.

But historical priority, and for present purposes historical relevancy, pertains to the resemblant scheme of William of Occam, the Invincible Doctor, who died expatriate in, perhaps, 1349, and whose *terminism* or conceptualism—possibly already intended by Aristotle—has so greatly influenced Hobbes, Bentham, Mach, Poincaré, Vaihinger, and Weyl. Occam's life was devoted to the solution of the problem which Galen's epigram lays at the root of all difference of opinion. For him such concepts as those of *genera* and *species* only *suppose* an intention of the mind, and never an existent thing, singly. It has been said recently by Delisle Burns, that Occam, in dethroning the universal and restoring the particular to its proper status, thereby founded science; certainly it was he who, as Vaihinger says, first developed a clear and definite treatment of the *fictional* nature of general ideas or universals and laws in a manner that is still a model for us. He recognised that, although the theoretical non-existence of *ficta*—such as text-book diseases—must be admitted, they are nevertheless to be tolerated as conveniences subject to change in accordance with experience, knowledge, and necessity. He held, too, that nouns, like algebraical symbols, are merely denotative terms whose meaning is conventionally agreed upon; that the universal is not existent otherwise than mentally and as a *terminus*, or predicable, a mental concept signifying univocally several singulars; and that the concept is not so much a thing as an act, having no reality besides the act and the singulars of which it is composed, while the act of abstraction does not presuppose any activity of the understanding or will, but is a spontaneous secondary process by which perceptions are, as it were, stored as soon as several similar representations are present, though in a fading or evanescent state.

This conceptualism, which in its original form stood midway between the nominalism and realism of the scholastic period, has always manifested an impulse towards direct observation, a distrust of abstractions, and an aversion from hypostatisation of abstractions: it greatly paved the way for the work of the Renaissance and, far more than the logic of Bacon, inspired the method of Harvey, as is evident from the introduction to the "De Generatione." It has ever since lain at the foundation of that characteristic English philosophy which, like so much that is English, is none the worse for being better appreciated abroad. In its modern form, as stated by Vaihinger and others, it does seem to reconcile, so far as is humanly possible, the conflicting claims of naturalism and conventionalism in diagnosis.

It is true that whenever stated, in either its original or its modern form, it is at once said to be so commonsensical as to be obvious. But only too many speak as if they believed otherwise, and, in the long run, become the slaves of their verbal symbolisations. Current medical literature is bestrewn with clichés that are meaningless if not connotative of tenth century realism or Hindu demonology, while the demands made on us by the public and sometimes imposed by the State are, as often as not, unjustifiable save on grounds of some primitive realistic belief.

By the neglect of conceptualism we allow great wealth of experience to lie dormant and unused; by its acceptance we come abreast of eager workers everywhere, and cease to pursue conceptual rainbows in the laboratory while neglecting the perceptual at the bedside or in the field. Conceptualism gives us, in diagnosis, the freest scope for observation, unhampered by the fear of forms; it offers us the widest choice of interpretative conventions, and the amplest range of symbolisation, to the clarification of our cognition and the betterment of our communications. Lastly, it teaches that, in respect of any art or calling, the function of science is to furnish fictive concepts and systems of concepts that will economise thought, fructify effort, and tend to the increase of experience, avoiding at once the limitations of nominalism and the illusions of realism.

It may be asked, however, what, in the light of conceptualism, is a correct diagnosis? The best diagnosis that we can attain is that which, when we have observed accurately, interpreted adequately and symbolised correctly, best satisfies the intellectual and affective tendencies and, in the Hippocratic phrasing, enables the physician to do what is right and to constrain to his will, not only the patient, but the attendants and the circumstances.

Absolute diagnosis is a function of Omniscience alone and is exemplified only in the perfect restoration that it is the prerogative solely of Omnipotence to ordain. Absolute diagnosis is not within our physical apprehension; it eludes us, as does the absolute elude the astronomer, the physicist, the chemist, and the mathematician.

But the *idea* of the absolute is present and necessary to all science and every science and, for the science of medicine, is represented by the conceptual miracle of healing in which all diagnostic antinomies are

resolved—the act of creative restoration which, without verbalisation, expresses at once the lesion of function and structure and its effacement.

It is, perhaps, worth reflection that Hippocrates, who said that the physician is most godlike when philosopher, has himself more than any other been spoken of by men as divine. As much was never said of the infinitely more successful Galen, whose system, unshaken during a thousand years, still influences the teaching in every class-room and in every laboratory and still dictates, for the most part, the modality of our formal diagnoses. His system, his rationalisations, and his philosophisings are never credited with the elemental intuition and simple rightness that seem to us inseparable from the clear mind and natural method of Hippocrates of Cos.

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THE SURGICAL DIAGNOSIS OF STERNAL PAIN.*

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THE aim of this discussion is to throw light upon the conditions which most closely resemble cardiac and aortic pain. Dr. Parkinson has just ably described the characters of this pain and the methods of diagnosing it from the pain of other medical lesions, and it remains for me to consider those surgical changes which may be mistaken by the practitioner or patient for cardiac disease.

For convenience these conditions can be best grouped as follows: (1) lesions of the thoracic viscera; (2) lesions of the abdominal viscera; (3) local lesions; and (4) spinal lesions.

Lesions of the Thoracic Viscera.

Many changes within the thorax may give rise to sternal or retrosternal pain, but neoplasms of the lung and mediastinum more rightly belong to the province of the physician than of the surgeon, and I shall, therefore, only consider that type of pain which occurs with diseases of the œsophagus.

Carcinoma of the Œsophagus.—With the exception of the rarer varieties situated in the neck, nearly all cases of carcinoma of the œsophagus give rise to a pain which is situated in the midsternal region, and too much stress cannot be laid upon the fact that the site of the pain is no indication whatever as to the site of the obstructive neoplasm. At first the pain is sharp and is only present during the act of swallowing, and it is rather from the nature of its radiation than from its position that a diagnosis can be made. The patient will often state that during the act of swallowing there is a very sudden and sharp pain which, starting in the sternum in front, passes directly through to the back so that he may feel as though he is gripped by some sharp-pointed instrument. Practically never does the pain radiate upwards towards the upper part of the shoulder nor down the left arm; moreover, at this stage it is never increased by exercise. Later, when the growth has eroded beyond the walls of the œsophagus, the pain may be much more constant and may be only slightly increased by swallowing. Under such conditions it is dull, aching, or boring, and may then be more definitely situated at the site of the lesion. As a general rule the diagnosis is made evident by the presence of difficulty in swallowing, but this symptom is by no means always present, and I have seen a case where a carcinoma of the upper end of the œsophagus had widely spread into the apex of one lung and had led to the belief that extensive tuberculosis of the lung was present without ever giving rise to difficulty in swallowing. Generally, however, the increase of the pain during swallowing and the regurgitation of the swallowed saliva, or even of blood-stained fluid, will suggest the nature of the lesion, the presence of which can be easily confirmed either by an X ray examination after a barium meal or by the use of the œsophagoscope.

Cardiospasm.—There is, perhaps, no lesion of the œsophagus which is so frequently overlooked or so often incorrectly diagnosed as this rare and interesting condition. The spasmodic obstruction which has an acute onset and lasts only for a few hours or at most a few days, does not as a rule give rise to any difficulty in diagnosis, since it is associated with a complete inability to swallow. Cases of true cardiospasm are, however, much more insidious in their onset and usually present a long history. I have noticed in some of the cases in my own series that, although the patient sought treatment as an adult, the symptoms dated back to childhood, and cases have been described by Weber, Still, Poynton, and others where treatment was required in early childhood. In the common

* Being one of the opening addresses in a discussion held on Nov. 8th by the Medical Society of London (see p. 1010).

variety patients seek treatment only at about the age of 50 and two distinct groups may be recognised. In the first the chief symptom is pain, which has a more indefinite distribution than that of carcinoma of the œsophagus, being more commonly situated in the epigastrium and passing through to the back; this condition is commonly mistaken for gastric disease. It is at first intermittent, although the attacks may last for a day or two and is increased by the taking of food. Only in the earlier stages before dilatation has become definite will the pain follow the actual ingestion of each mouthful. As dilatation becomes more marked the pain tends to be more in evidence at the end of the meal and thus resembles gastric disease. The second variety, in which the chief symptoms are vomiting or the regurgitation of food, will give less difficulty in diagnosis. When the condition is well established there is a constant feeling of discomfort and fullness, although as the œsophagus dilates there may be spasms of severe pain which then become sternal or retrosternal. The discomfort itself appears also to be thoracic in situation and loses its close relationship to the taking of food. Frequently it becomes more marked as the day progresses, and owing to the distension of the œsophagus may often be associated with dyspnœa and a feeling of stifling. It is in this stage that the patient, and even the medical attendant, may be led to infer that the pain and dyspnœa are cardiac in origin. Vomiting, however, is generally present. It may occur spontaneously or be brought about by taking a deep breath; in other cases it is more evident when the patient lies down, so that he may actually be awakened at night by the regurgitation of the œsophageal contents. A large quantity is brought up and may give considerable relief to the discomfort and dyspnœa. Although the characters of the pain may in this stage somewhat closely resemble cardiac disease, there should not really be any difficulty in making a diagnosis. Careful attention to the past history will usually indicate that the œsophagus is at fault, and an indication of the nature of the change may be given owing to the fact that on attemptimg to withdraw a test-meal the fluid commences to be returned before the tube has reached the stomach. X ray investigation and œsophagoscopy should make the diagnosis clear. Confusion lies rather because an adequate case-history has not been taken than because the individual symptoms are not easy to identify. One would imagine that with the dilatation of the viscus without destruction of its coat there should be a definite area of hyperæsthesia and referred pain. So far, however, I have been unable to elicit the presence of such a symptom in my own series of cases. Possibly this may be due to the fact that the œsophagus lacks a closely connected serous coat, for we are led to believe that referred pain is due to distension of pericardium, pleura, or peritoneum rather than to actual inflammatory changes in the wall of the viscus.

Lesions of the Abdominal Viscera.

It is well known that patients who are suffering from lesions of the upper abdomen often seek advice in the belief that they are suffering from some cardiac disease. This is largely due to the fact that the majority of the so-called dyspeptic pains are, in the early stages at least, referred to the thorax. The difficulty is also increased by the fact that distension of the stomach is not uncommonly associated with dyspnœa and cardiac pain, and, perhaps, even an irregularity of the pulse, and I have found that in some such cases it has been necessary to ask a physician to eliminate the possibility of the presence of cardiac changes in addition to the upper abdominal lesion.

Gastric Ulceration.—As a general rule the pain of a gastric ulcer has so close a relationship to food that but little difficulty is experienced in determining that the lesion is in the stomach. Certain difficulties may, however, arise. In the earlier stages the pain is nearly always referred to the midsternal region, and before penetration of the muscular coat has occurred the ulcer may be associated with a band of hyperæsthesia which on the left side reaches as high as the nipple. In the later stages the area of hyperæsthesia disappears and the pain tends to become more localised. The real point of distinction lies, however, in the fact that with a chronic ulcer there is a sharply localised area of tenderness in the mid-epigastrium. Late ulcers which have penetrated do not show the close relationship of the pain to the ingestion of food, and, in that peculiar variety of ulcer which has a very short history, resembling carcinoma, the pain is frequently constant from the very onset, although the X ray discloses an ulcer which has penetrated deeply into the substance of the pancreas. In this stage, however, the pain is characterised by the fact that it radiates much more widely, and to an area which is distinct from that of a cardiac or thoracic lesion. It may pass upwards to between the shoulders or more commonly to the mid-spinal region, and in one case of my series the patient had been for some weeks under the treatment of a famous bone-setter who had applied massage and manipulations in order to overcome a supposed displacement of one of the small bones of the back. These more definite cases are nearly always, however, easily recognised owing to the changes in the test-meal and the results of an X ray examination.

Acute Dilatation of the Stomach.—Whether it be brought on by excessive feeding, by paralysis of the gastric wall, or by volvulus of the stomach, is nearly always associated with cardiac distress and with dyspnœa. In some cases, if the onset is sudden, the patient may become profoundly collapsed and the pulse may become small and irregular. The more simple forms of acute dilatation are, however, associated with vomiting, and therefore but little difficulty arises in making a correct diagnosis. With a volvulus of the stomach there is no vomiting, and a careless examination may fail to reveal the fact that there is an enormous distension in the epigastrium due to the dilated viscus.

Visceroptosis.—A case of general visceroptosis in which the symptoms are limited to the stomach may resemble a cardiac lesion in that the pain is always increased by exercise or work and is relieved by lying down. Such a condition is frequently associated with distension of the stomach by gas, which will give rise to a certain amount of cardiac distress and may make the patient believe that her heart is at fault. A careful investigation of the history will reveal the presence of past gastric or intestinal attacks, and an examination will show the presence of ptotic changes in the abdomen and viscera, so that no real difficulties will arise.

Lesions of the Pancreas and Gall-bladder.—Chronic inflammatory lesions of these two viscera may give rise to a constant and relatively severe pain which in part is referred to the midsternum, but is usually to be distinguished from a cardiac pain by the fact that it is more marked after food and is referred to a different area. Characteristic of gall-bladder and liver pain is the presence of referred pain in the right shoulder, whereas pain associated with the pancreas is more common in the back and passes up to the left shoulder. In no case does the pain pass up to the front of the left thorax and down to the left arm. Attacks of severe colic, which are so frequent with gall-stones, and are present in many cases of chronic pancreatitis, should not give rise to any difficulty. The suddenness of onset and the severity of pain, its localisation to the upper abdomen, and its sudden cessation are all characteristic and have to be distinguished from an acute disaster in the upper abdomen, such as a perforation or acute pancreatitis, rather than from any interthoracic lesion. The last-named disasters should never lead to an error of diagnosis, for they are associated with the characteristic rigidity of the abdominal muscles.

Local Lesions.

A tuberculous focus in a rib or cartilage overlying the precordium, or the presence of a bony tumour in the

same situation, will at first give rise to localised pain which may be mistaken for a cardiac lesion, but even in these early stages they will probably be associated with definite tenderness on pressure which should give an indication of their nature. Later a tumour will form which, if solid, will not pulsate, but, if fluid, may have a transmitted pulsation from the underlying cardiac beat, and thus may be mistaken for a penetrating aneurysm. In such cases a diagnosis on purely clinical grounds may be difficult, but a carefully taken X ray will nearly always reveal inflammatory changes in the bone which can be distinguished from the simple pressure erosion such as occurs with an aneurysm. However, it is known to us all that cases have occurred in which a penetrating thoracic aneurysm has been opened in the belief that it is an abscess.

Spinal Lesions.

A lesion of the spinal cord—the meninges or the vertebral column—may, if it involves the nerve-roots, give rise to an area of hyperæsthesia which, overlying the precordial area, may simulate the cardiac lesion. There should, however, be little or no difficulty in that nearly all spinal lesions give rise to bilateral hyperæsthesia, or, if there be a unilateral tumour compressing the roots only on one side, there is almost certain to be some interference with the functions of the cord, leading either to changes in sensation or to a spastic paralysis of the legs. With tuberculous disease there should be but little difficulty, for examination will reveal the presence of a rigidity of the vertebra even if there be no deformity or abscess formation. In any case a lesion of the spinal cord is likely to be rapidly progressive unless adequately treated, the only common exception to this being a case of meningitis circumscripta, where the hyperæsthesia alone may persist for a considerable period. In one case of my own there was a band of such hyperæsthesia passing round the thorax, and no other indication of any spinal cord change for nine months after the onset.

THE TREATMENT OF CONTRACTED PELVIS WHEN FIRST SEEN DURING LABOUR.

An Address delivered before the Harveian Society of London on Nov. 4th

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THE large number of varieties of contracted pelvis and differences in actual size, together with the variations in the size and position of the child and strength of uterine contractions, call for corresponding elasticity of management and treatment. A general theoretical survey of the whole subject of contracted pelvis would take a long time, and therefore I propose to select one particular aspect of the problem, and to deal with it on strictly clinical lines based upon observations made by actual contact with patients seen in a maternity hospital.

One of the most frequent obstetrical emergencies sent to hospital is the patient who has been long in labour and remains undelivered because of some apparent obstruction caused by pelvic contraction. I say "apparent" because an important preliminary to any treatment is the correct diagnosis that the cause of delay is actually due to pelvic obstruction. Indeed, one of the commonest errors in obstetrical diagnosis is the assumption of contraction as a cause of delay or failure to deliver, but of this important matter I shall have more to say later. A further point to bear in mind is that, while the minor degrees of contraction are quite commonly seen, the more serious degrees which cause a really obstructed labour are rare in this part of the country. In fact, very many of the practitioners who have conducted a thousand or more confinements have never met with a severely contracted pelvis, though they will probably remember many cases where there was a difficult delivery by forceps with much moulding of the head. Therefore in any case of delay due to disproportion between the fœtal head and the pelvis there will be a strong probability, based upon the small case-incidence of severe contraction, that vaginal delivery of a living child can be effected.

The Flat Pelvis.

There are two chief clinical types of delayed labour due to disproportion, based upon the two varieties in shape of the contracted pelvis, and it is important to grasp the differences between these two groups which can be ascertained by clinical examination.

In the first group we have the simple flat pelvis in which the principal factor is the projecting sacral promontory encroaching on the true conjugate. The characteristic clinical features here are as follows. The patient has had a prolonged first stage in which the membranes ruptured at the beginning or during the early hours of labour. The head was floating above the pelvic brim before labour, and is still comparatively high in spite of the long duration of the first stage. The failure of the head to descend through the brim and engage with the undilated os, left by the premature rupture of the membranes, is responsible for its slow dilatation, or even stationary condition. In the severer cases the nipping of the cervix by the head against the symphysis and promontory will produce an increasing œdema of its lips. The mother is probably very tired, but at this stage the fœtal heart will still be normal.

The proper treatment, of course, depends upon the answer to the all-important question, Will the head come through the brim? and before we consider treatment it will be necessary to spend a few moments in attempting the answer of this question. Perhaps in no other condition in midwifery are a sound judgment and ripe experience more valuable. A correct opinion is often very difficult to form, but it will be of vital importance to both mother and child.

The Degree of Obstruction.

Let us try to answer the question. The first considerations, before or early in labour, are the pelvic measurements, the amount of overlapping of the head above the symphysis, and the ease or difficulty with which the head can be pressed down into the brim. Favourable indications are the absence of any marked diminution of the measurements, particularly the external conjugate, and considerable difficulty in feeling the sacral promontory by vaginal examination. If this point can only just be touched it need offer very little, if any, difficulty, but if it is easily reached and gives the impression of over-hanging, the brim will probably cause serious obstruction. It is important also to examine the degree, if any, of overlapping. If the head overlaps only the deep surface of the symphysis, and therefore does not actually overhang the superficial border, it will probably mould sufficiently to pass the brim; but any definite overhang indicates a severe degree of disproportion.

So much for preliminary considerations which, we will assume, discover no evidence of severe obstruction. When the patient is examined during labour no further opinion can be expressed until the membranes have ruptured and until pains are strong. The reason for the second is obvious. The membranes must be ruptured to allow the uterus to act directly on the child, and thus press the head hard into the brim. It is necessary, therefore, to re-examine the patient after two or three hours of good pains have followed rupture of the membranes. The points now to be noted are fixity of the head, increasing flexion—shown by the increasing prominence of the forehead and disappearance of the occiput—and descent. Increasing prominence of the forehead with descent of the occiput

is a very favourable sign, and, with absence of overlapping, usually means that the head will pass the brim, given strong contractions and sufficient time. It will be noted that very much information can be obtained by abdominal examination. By the vagina favourable signs will be engagement of the head with the edge of the os, followed by progressive dilatation, and absence of much œdema of the cervix. Palpation of the sagittal suture may yield useful information of the obliquity of the head, but estimation of this physical sign requires very much practice and experience. Unfavourable vaginal signs are failure to reach the head, with maintenance of it in this position, and non-dilatation of the os, which hangs down as a loose fringe, unoccupied by the obstructed head.

Definite Obstruction at the Brim.

After examination on these lines we are faced with three possibilities: (1) the head will not and cannot pass the brim; (2) the head may or may not come through; (3) the progress of fixity, flexion, disappearance of the occiput and dilatation of the cervix is clearly marked, indicating that natural delivery is only a matter of reasonable time.

In the first case the problem is one of the greatest difficulty if the child is alive. The alternatives are Cæsarean section, version, pubiotomy, and craniotomy. If the child is dead or moribund, perforation is obviously the only thing to be done. Of pubiotomy I cannot speak from any personal experience. It is an alternative to craniotomy rather than Cæsarean section. Version is of surprising value in some cases seen early when the uterus can be rendered sufficiently soft by an anæsthetic to eliminate the danger of rupture of the lower segment. Apart from this the chief practical difficulty is the incomplete dilatation of the os, preventing the entrance of the hand into the uterus without laceration of the cervix. If version is decided upon, every care should be taken to dilate the os slowly in order to avoid laceration, and after the leg has been brought down the child should be left alone and not pulled upon, to allow the uterus to complete the dilatation by driving the child's body through the os. The temptation to pull on the leg should be sternly resisted.

Successful version requires considerable judgment and skill. Its possible time of application is limited, for it can only be done when there is sufficient liquor amnii remaining to allow mobility of the child in utero, and, on the other hand, the os must be sufficiently dilated to admit the hand without laceration. Not the least exercise of judgment is that control of the temptation to extract the child's body quickly by traction on the leg which has just been brought down.

It is in this clinical condition of labour obstructed by a flat pelvis with the child alive and the os only partially dilated, with no possibility of the high vertex passing the brim, that Cæsarean section has been urged and practised by some obstetricians. Whether or not it is a safe method depends entirely upon the possibility of infection having already occurred. In the early stage just described, where aseptic precautions have been observed with minimum vaginal examination, the risk to the mother is very small, in spite of the membranes having ruptured prematurely, and it is probably the best way out of a difficult situation. At a later stage, however, when many hours of fruitless labour have passed, with consequent exhaustion of the mother and distress of the child, especially if forceps have been applied and the cervix and perineum bruised or lacerated, Cæsarean section definitely has no place, and cannot be too strongly condemned. It is a source of great danger to the mother, and frequently cannot save the child. The only treatment in such a case is perforation of the head.

Cases of Uncertainty.

The second clinical group is that in which much careful thought is required. Here, at the beginning of labour, it is uncertain whether the head can pass the brim. This group tends to diminish relatively in numbers with increasing experience, but there will always be some cases on which it is impossible to form an opinion in the early stages of labour.

If there is sufficient obstruction present to prevent the birth of a live baby, Cæsarean section is obviously the best treatment, provided conditions are suitable. During the early stages, therefore, the labour may be regarded as a "trial labour"—that is, the patient may be watched closely, after the membranes have ruptured, for signs of descent and successful vaginal delivery; but if observation finds that no progress is evident, then, at the earliest moment for diagnosis to be made, Cæsarean section should be done. It is necessary again to emphasise that throughout the so-called trial labour every possible care must be taken in vaginal examination to prevent infection.

If, however, it is considered that the head will pass the brim there are certain points to bear in mind. We may expect a long and fatiguing first stage occupied in moulding the head, and there is nothing of greater value to the labouring mother than morphia-scopolamine sleep. As soon as it is decided that labour shall run its course, an injection of morphia $\frac{1}{6}$ to $\frac{1}{4}$ gr. and scopolamine 1/150 gr. should be given at once, the scopolamine being afterwards repeated every one or two hours. It is not possible or desirable here to describe fully the technique of this form of narcosis, but let me emphasise its very great value in conserving the physical and moral strength of the mother. Under its influence much pain and anxiety are saved and dilatation is assisted, while the contractions are scarcely altered. Indeed, I regard morphia and scopolamine as essential adjuncts to the treatment of the first stages of labour with a flat pelvis.

In favourable cases—and in most of them treatment is generally successful—the processes of dilatation, moulding and passage through the brim are remarkably easy and quick, and the patient suffers comparatively little fatigue and pain. Nothing can be more striking than the contrast between the condition of the woman made tired and anxious by long hours of unmitigated labour, with slow dilatation, and that of the same woman relieved by an injection of morphia and 30 gr. of chloral by mouth. Apart from the improvement in the general condition, dilatation is usually much accelerated and descent of the head assisted. But if the head becomes fixed in the brim without further descent, help may be given by forceps, provided that the os is dilated and time has elapsed for moulding to produce the maximum adaptability of the head. When the head has once passed the brim into the cavity, forceps will seldom be necessary, as there is now sufficient room for easy descent.

The Abuse of Forceps.

In the third group there is certainly no insuperable obstruction to the birth of a live baby, and we have sufficient data from clinical examination to make it clear that the head can pass the brim. This is one of the most frequent of all emergencies admitted to a maternity hospital as obstructed labour—because of the failure of too early forceps application—and there is none more easily treated. Forceps have usually been applied for two reasons—first, the knowledge that a contracted pelvis is present gives the doctor a bias in favour of forceps which he is anxious to use as soon as possible, and, secondly, the long painful first stage and slow dilatation, unrelieved by morphia and chloral, stimulate the relatives to urge that something should be done. Forceps are then applied through a partially dilated cervix to a high and incompletely moulded head. While the absence of moulding effectually prevents engagement in the brim, the forcible attempt has torn the cervix, bruised the perineum, and still further exhausted the mother. The baby's head meanwhile has suffered stress which will render it less able than before to stand the ordeal of delivery.

No amount of argument or excuses can justify the application of forceps to a high unmoulded head through a partially dilated cervix. It is an ignorant

and stupid practice, and is the cause of more disaster and disability than any other manipulation in midwifery.

After admission to hospital these patients are treated by morphia and chloral and left alone for moulding and full dilatation to occur. A quick spontaneous delivery usually follows, but, if necessary, forceps are reapplied when the head has passed into the pelvic cavity, delivery being effected without difficulty.

The Generally Contracted Pelvis.

The generally contracted pelvis offers a rather different clinical problem. It differs from the flat pelvis in that, when examination or consultation is made on account of delay and lack of progress, with increasing fatigue of the mother, the head is found to have passed the brim and become impacted in the cavity just below the brim. Dilatation of the cervix is probably complete, the head is extremely flexed, there is a large caput, and some œdema of the os. In the treatment of this form of obstruction it is essential again to remember that no attempt at delivery by forceps should be made until sufficient time—at least three hours—has elapsed after full dilatation of the os for moulding to adapt the shape of the head. But here there is not the same likelihood of the absence of moulding as in the same stage of labour with a flat pelvis, because it is only by moulding that the head will have been able to descend into the small pelvic cavity, where it is generally found when attempts at delivery are made. The treatment here is the application of forceps and steady firm traction, which will have to be maintained until the head is clear of the bony outlet. Indeed, sometimes it is the outlet which offers the greatest difficulty. If the child is alive, forceps traction must be maintained consistent with the mother's condition; but if the child is dead or dying the head should be perforated by passing the perforator along between the shanks of the forceps blades as they lie in situ. It is unnecessary to remove them and reapply them after perforation. Traction, after perforation has allowed the partial collapse of the head, will usually succeed in delivering the head remarkably easily compared with the fruitless efforts made before perforation.

In conclusion, I should like to emphasise again that hospital experience shows that the best treatment for the minor degrees of contraction which hold up the head above or in the brim is *morphia*, *chloral* and *time*. Of far more value than ill-advised early application of forceps is the quiet sedative effect of the morphia-sleep which enables the head to mould and the patient to conserve her strength, while she is saved the laceration and damage which so seriously hinders her recovery.

DERMATITIS FROM HANDLING FLOWER BULBS.

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"Lily rash" from cutting the stems of flowers, chiefly narcissi, and from handling the bulbs of hyacinths, daffodils, narcissi and tulips, has been known to occur from time to time, mostly, it is believed, in Jersey and in the Scilly Isles. The rash was thought to be due to the acrid juice of the stalks of the flowers, or to the oxalate of lime in the bulbs.

Recently two large firms with extensive bulb packing and sorting departments have been visited, with a view to amplifying knowledge of the occurrence and character of dermatitis from handling flower bulbs. A small proportion of packers and sorters of bulbs were found to be suffering from a strictly localised dermatitis, which extended under the nail, where splitting of the skin caused considerable pain and disability. The longer the nails were worn, the more pronounced was the condition. The nail substance was in every case unaffected. Dermatitis occurred after a few days' work handling bulbs, and was progressive until the worker sought the protection of gloves or finger-stalls, when the condition improved rapidly.

All the workers affected placed the onus of the complaint on tulip bulbs. Those who handled narcissus bulbs exclusively were affected in quite a different way—the skin of the extensor aspect of the terminal phalanges was worn and flaked away by small abrasions and friction. Those selecting, brushing, and packing only hyacinth bulbs were unaffected.

The cause of the peri- and hyp-onychial dermatitis from handling tulip bulbs might appear at first to be friction, but this as the sole agent may be rejected. The onset of the condition within a short time of starting work on bulbs; the course, increasing in severity day by day until protection to the exposed parts is obtained; the fact that those with long, rather than short, nails—i.e., those with more exposure of the finger-tips, are singled out, and that comparatively few are affected—these are all points against the friction explanation. It has been noted repeatedly that where friction causes soreness of the finger-tips there are few physical signs, and complaint is made after some days' work; the condition, also, tends to improve to a marked degree with time and thickening of the skin.

An examination of the bulbs of various flowers readily discloses that hyacinths, narcissi, and daffodils, rather than tulips, would be the chief offenders if friction were the explanation of the peri- and hyp-onychial dermatitis, whereas workers were unanimous in fixing the blame on tulip bulbs. Now the tulip bulb is peculiar in that it is protected by a single layered and rather rigid testa, which easily splits on handling and reveals the bulb substance. The hyacinth is wrapped around with several layers of testa covering, and so are the bulbs of daffodils and narcissi.

It seems not unreasonable to suppose that trauma first occurs, followed by the introduction under the nails of an irritant derived from the bulb substance. In the bulb substance are stored the plant foods, but which of these constitutes the irritant it is difficult to say, as little is known of the chemistry of the bulb. Whatever may be its chemical composition, it was easy to express from a tulip bulb an acrid juice which experimentally produced a subungual irritation in a short time, without the existence of previous trauma.

There has recently appeared a suggestion by the International Labour Bureau that the *Leptus autumnalis*, or harvest bug, is responsible for erythema and conjunctival irritation in workers among hyacinth bulbs (Zeper). I have been unable to verify this statement. Moreover, the type of inflammation was not in any way suggestive of a parasitic origin.

While examining microscopically the covering testa of various bulbs, I found that the testa of the Roman hyacinth, which is fine and flaky, readily produced a fairly intense irritation of the skin of the neck. This was verified by my colleague, Dr. J. C. Bridge, by experimental production of erythema and irritation. There seems here to be a resemblance to the well-known dermatitis from *Primula obconica*, *Rhus toxicodendron*, and other plants.

In conclusion, chronic peri- and hyp-onychial dermatitis is produced by handling tulip bulbs and constitutes yet another of the trade stigmata, the recognition of which may be of great value to the medical observer. A similar condition has not, to my knowledge, been caused by any other occupation.

References.—MacLeod, J. M. H.: Diseases of the Skin, p. 273. Hygiène du Travail, No. 66 (appearing shortly).

PRESENTATION TO A MEDICAL MAN.—On Oct. 27th, at Littlebourne, near Canterbury, Dr. Edward Griffith Freeman Morris was presented with a cheque for £225, a travelling bag, and an illuminated address on his retirement after 37 years of practice. Thirteen hundred people from 14 different villages subscribed to the gifts.

Clinical and Laboratory Notes.

A PECULIAR CASE OF PNEUMOPYOPERICARDIUM.

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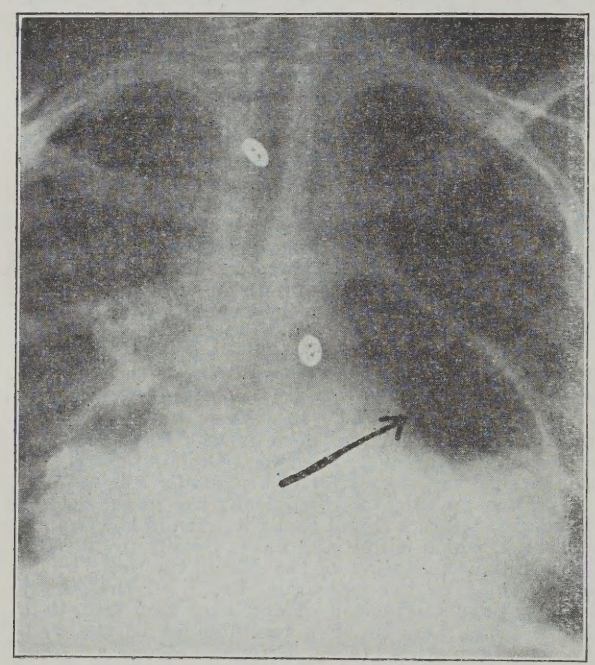
IN view of the rarity and clinical interest of this condition the following case appears worthy of record.

On March 9th, 1925, a boy of 11 was admitted to St. Thomas's Hospital with a week's history of pain in the region of the left shoulder, increased by deep breathing; there had been occasional vomiting throughout the week, and, on the day of admission, a slight epistaxis.

Condition on Admission.—Breathing was at the rate of about 40 to the minute; he was a little cyanosed and somewhat distressed by the pain in his shoulder. Temperature 103° F., pulse regular at 140 to 150, but of poor tension. Physical examination showed some enlargement of the cardiac dullness to the right, and the heart sounds were a little indistinct; there was no murmur or friction. Over a small area at the angle of the left scapula diminished resonance to percussion was found, with tubular breathing and ægophony. The tongue was furred and both tonsils large, but not acutely inflamed; the urine was normal.

Pericardial effusion was suspected, but the physical signs were too anomalous for a definite diagnosis to be made. For the next few days there was no striking alteration in his condition, but on the 15th he complained of abdominal

FIG. 1.



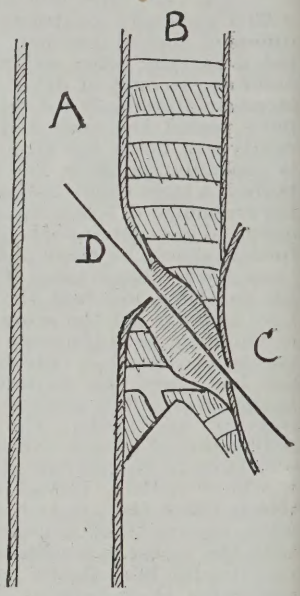
pain, and when examined was found to be rigid and tender in the epigastrium; at the same time the cardiac dullness had almost disappeared, to be replaced by hyper-resonance. The heart sounds were audible, but very faint, the pulse very rapid and feeble, and the general condition much changed for the worse. A blood-count performed this day showed: red cells 4,320,000; leucocytes 20,300; on the following day the leucocyte count had risen to 45,700, and an X ray which, in the prone position, had showed only the appearances of a large effusion, displayed, when taken semi-erect, a large and distinct collection of gas in the pericardial sac, above the fluid level (Fig. 1).

A blood culture taken 48 hours earlier proved sterile. The diagnosis of pneumopyopericardium having been made, operation was decided on, and performed by Sir Cuthbert Wallace.

Operation.—Through a horizontal incision the fourth and fifth ribs in the left nipple line were exposed and resected and the pericardium incised; very foul pus, accompanied by gas, escaped, and the surface of the heart could be seen covered by purulent lymph. *B. welchi* antiserum (40 c.cm.) was given, and the pericardium drained. The boy survived the operation for a full week, his general condition showing remarkable fluctuations; a striking feature of the case after the operation was the abnormally large quantity of purulent fluid discharged from the wound, the dressings being soaked through many times a day. Death took place after a prolonged period of cyanosis and collapse, ending in coma.

Cultures of the pus showed a hæmolytic streptococcus, with *B. mucosis capsulatus* and a gas-forming anaerobe.

FIG. 2.



A = œsophagus; B = trachea; C = pericardium; D = probe passing through sinus from œsophagus into pericardium.

The *post-mortem examination* showed very clearly the peculiar origin of the condition. A caseous and partly calcified tuberculous lymph gland lying behind and to the right of the trachea just above its bifurcation, had, by adherence to and traction upon the œsophagus, created a diverticulum, from which a sinus led, through the remains of the infected gland, directly into the pericardial sac (Fig. 2).

Infection had no doubt taken place from food particles actually entering the pericardial sac, it is probable that after operation a large part of the pus draining from the wound was composed of the milk upon which the boy was being fed. The pericardium was adherent to the lung on either side, and showed an advanced acute suppurative inflammation. The remaining organs showed little pathological change; there was no evidence of consolidation in either lung.

Discussion.

The first account of such a condition appears to have been given by Bricheteau in 1844. Stokes in 1855 had collected three cases. Under the more general heading of pneumopericardium James,[1] in 1904, gives an account of 37 authenticated cases, and emphasises the rarity of the disease by noting that no case of this kind has been observed at the Vienna City Hospital during the 35 years of Schrötter's experience there nor during the whole reign of his predecessor, Skoda. Rigler,[2] reporting a case of tuberculous pericarditis in February, 1925, in which artificial pneumopericardium had been induced under the erroneous impression that the effusion was pleural, refers to Rosler's review in 1918 of 73 cases, all that had been then recorded. His classification of the ætiology is as follows:—

(1) *Infection by Gas-producing Organisms.*—(Five out of James's 37 cases, one of these, apparently secondary to facial erysipelas, recovered.)

(2) *Trauma* (18 of James's cases—i.e., 50 per cent.).—(*a*) By puncture wound of chest wall; (*b*) by penetrating wound of œsophagus (James's own case was caused by the swallowing of a fragment of bone); (*c*) fracture-perforation of ribs or sternum.

(3) *Perforation following disease of* (*a*) pericardium; (*b*) neighbouring organs—e.g., empyema, gastric ulcer.

[1] James: Transactions of American Physicians, 1904.
[2] Rigler: Jour. Amer. Med. Assoc., lxxxiv., 504.

(4) *Artificial:* (*a*) Accidental (as in Rigler's case); (*b*) intentional, in the attempts, attended by very dubious results, to treat pericardial effusion by the introduction of air.[3]

Rigler notes the following characteristics of the condition. The *symptoms* are very variable, depending on the ætiology of special cases; two only are more or less constant—pericardial pain and attacks of dyspnœa, cyanosis, and syncope. On the other hand, the *signs* are constant and unmistakable—a shifting area of tympany over the precordia, accompanied by splashing, gurgling, or tinkling sounds synchronous with the heart-beat, with greatly diminished heart sounds The X rays provide certain confirmation of the diagnosis. The clinical and X ray picture is, according to Rigler, only likely to be confused with one other condition—that of pneumomediastinum, a complication of surgical emphysema following chest-wounds. This, however, can be distinguished by (*a*) the fixed nature of the tympanitic area in varying positions of the body; (*b*) the normal intensity of the heart sounds; (*c*) accompanying emphysema of connective tissue in the neck; (*d*) complete, or almost complete, absence of symptoms, and rapid recovery.

The case here recorded is probably unique in its ætiology. James quotes four cases caused by sinus-formation through tuberculous lymph glands, but the communication was in every case to bronchus or lung; on the other hand, of his œsophageal cases three followed carcinomatous ulceration and three were traumatic.

In conclusion, I acknowledge with gratitude the assistance received from Prof. Hugh MacLean, under whose care the patient was admitted, in preparing this account.

PREGNANCY, HYPERPIESIA, AND MENINGITIS.

BY JOAN L. LUSH, M.R.C.S. ENG.

THE following case is of interest as showing the occurrence of hæmorrhagic meningitis in association with pregnancy and hyperpiesia.

Mrs. C., a married woman of 35, was admitted to University College Hospital complaining of severe headache and pain in the back of the neck with vomiting for three days. Seven years previously she had been in another hospital for six months with Sydenham's chorea, but otherwise had always been healthy.

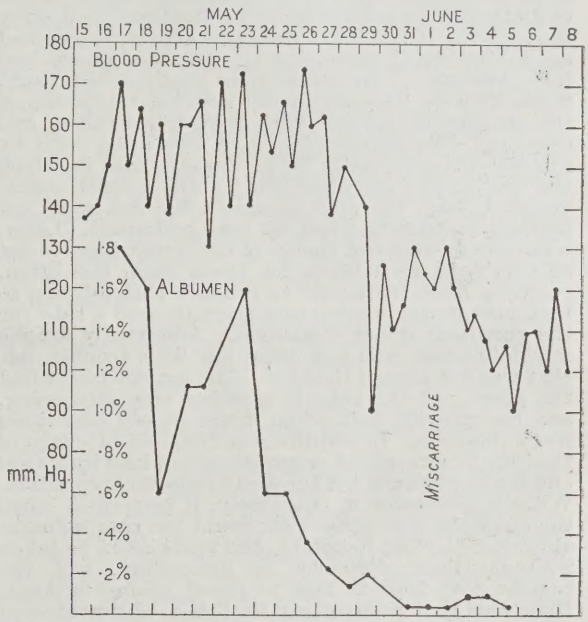
On examination she was found to be pregnant about five months, this being her first pregnancy. Her urine was scanty in quantity and boiled two-thirds solid with albumin, but no acetone was present and no abnormality was found microscopically. The diastatic index was normal. The heart, lungs, abdomen, and nervous system appeared normal; the pulse-rate was 70, the temperature 98° F., and the blood pressure 140 mm. Hg. There was no œdema and the fundus oculi showed no changes. The patient complained of severe pain, chiefly in the back of the head and neck, and the neck muscles were kept in rigid contraction. Drastic purgation was instituted and alkalis and a strong diuretic given by the mouth; aspirin and pyramidon were given in an attempt to relieve the headache. No further vomiting occurred.

Thirty-six hours after admission the blood pressure rose to 170 mm., and the urine was still loaded with albumin. The pain was now greatest in the back of the neck, and Kernig's sign was definitely positive on the left side but doubtful on the right. Both plantar reflexes were flexor, and the knee-jerks were brisk. Lumbar puncture was thought advisable, and about 10 c.cm. of deeply blood-stained turbid fluid were obtained at low pressure. After centrifugalisation the supernatant fluid was deep yellow in colour and gave the Hb bands in the spectrum. There was a definite increase in the lymphocytes, but no organisms were seen, and no growth was obtained on culture. The W.R. was negative. As the headache was slightly relieved by the spinal puncture this was repeated next day, similar fluid being obtained but with some difficulty. The pathological findings had not altered. Stiffness of the neck muscles and a double Kernig were present.

[3] Vide Oppenheimer: Jour. Amer. Med. Assoc., lxxxii., 1685.

The general condition of the patient was good, and pulse and temperature remained normal. The blood pressure varied between 130 and 180 mm., tending for the most part to be higher in the morning. The output of urine continued to be small and the percentage of albumin high. Fœtal movements were felt in the uterus, which contracted under manipulation. In the course of a week the pain in the head and neck had become less severe though the other signs remained as before. Lumbar puncture was done once more, this time yielding clear but bright yellow fluid, which still showed excess of lymphocytes, but no longer gave the Hb. bands.

A fortnight after admission the patient complained of intermittent pain in the lower part of her back and abdomen; about the same time the amount of albumin in the urine decreased markedly, and the blood pressure fell suddenly to 90 mm.; fœtal movements could not be felt, but the pain in the back and pelvis continued. Three days later a slightly macerated fœtus weighing 2-3 lb. was delivered without difficulty. The patient made an uneventful recovery, the blood pressure falling to between 100 and 120,



and the albumin in the urine decreasing to a trace. The headache and stiffness of the neck disappeared entirely, and the patient left the hospital apparently quite well four and a half weeks after admission.

In this case, in the absence of any direct evidence of another cause, it seems reasonable to suppose that the hæmorrhage from the meninges was an unusual manifestation of pregnancy toxæmia but comparable with the hæmorrhages seen post mortem in the liver and kidneys of acute cases. The constant increase in the lymphocytic content of the spinal fluid suggests a possible infective origin, but the absence of fever or increase of pulse-rate is against this view. In spite of the fact that the spinal fluid showed definitely that pathological changes had occurred in the central nervous system and the symptoms were not therefore due merely to meningism of toxic origin, yet the patient never once showed any twitching, fits, or mental change, which are the more usual cerebral manifestations of pregnancy toxæmia. As frequently happens, recovery in this case seems to have been determined by the spontaneous emptying of the uterus. The meningitic symptoms cleared up gradually but the fall in blood pressure and drop in the albumin content of the urine were markedly sudden and probably coincided with the death of the fœtus, though this was not expelled till two days later.

I am indebted to Dr. Batty Shaw for permission to publish this record.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF SURGERY.

TREATMENT OF ŒSOPHAGEAL CARCINOMA.

A MEETING of this Section was held on Nov. 3rd, Mr. V. WARREN LOW, the President, being in the chair, when Mr. F. J. STEWARD opened a discussion on the treatment of œsophageal carcinoma, which might, he said, either be frankly palliative or aim at a cure.

Palliative Treatment.—The chief symptom was dysphagia due to the obstruction caused by the growth, and to this palliative treatment was directed. The lumen of the structure could be either enlarged by bougie dilatation, or maintained sufficiently to allow food to pass by inserting tubes of various kinds, or diathermy or radium might be employed to destroy the growth. Or, finally, starvation could be guarded against by doing gastrostomy. All these means had their advocates, but none were really satisfactory. Since 1896 he had seen many cases of carcinoma of the œsophagus treated with Symonds's tubes, and cases not lending themselves to this dealt with by gastrostomy, the latter being usually cases in which the disease was advanced and in which death supervened, though the discomforts in the end were less than if that operation had not been performed. Later, when the speaker had charge of the throat department at Guy's, he used tubes for these cases less often, resorting more frequently to primary gastrostomy, so that now it was many years since he used a tube for the condition under discussion. Admittedly a tube might function well and cause but little trouble, but that was not always the case. The patient might find the placing of the tube in position very distressing, and the gnawing pain when it was in situ sometimes was unbearable. In addition, the frequent blockage of the tube by either food or growth meant its withdrawal and the re-enactment of the dread process of reposition. Witzel's gastrostomy, conversely, if performed when the diagnosis was arrived at, made the case manageable after the first fortnight, and feeds could be taken without either difficulty or discomfort, and the patient soon learned how to guard against leakage. He agreed that gastrostomy for this condition showed a high mortality, but the assurance of freedom from starvation which it gave made it superior to treatment by tube, diathermy, or radium, while the freedom from subsequent irritation seemed to prolong the patient's life. Two of his patients with this condition lived more than five years after their gastrostomy.

Curative Treatment.—The two means so far employed in attempts to cure carcinoma of the œsophagus were radium and surgical removal. The first of these had been widely used for 18 years, but from the standpoint of cure the results attained had been disappointing. It was not denied that radium could destroy carcinoma of the œsophagus, but complete disappearance of the disease under radium was exceptional, a reappearance usually taking place sooner or later. There seemed to be a double explanation for this. Variation in the effect of a given dose of radium might be because of a difference in the resistance of the cells or their surrounding stroma to the rays actually reaching them; it probably was not due to differences of tumour hardness. Possibly the relapses were due to the limited radius of action of the radium, the dose given having been too small to destroy the growth. Guisez, of Paris, of 270 cases so treated, had 30 who survived more than 18 months, two being free after ten years, one five years after, and four three years after. But he used doses of from 100 to 120 mg. of radium bromide divided into three tubes which were placed end to end in a hollow bougie. There were five or six treatments, given every two days, a dosage three times as great as that used by most other people. Guisez made it a point of great importance that the whole vertical extent of the growth should come directly under the emanation. Improved results with radium, Mr. Steward thought, would depend on earlier recognition of the disease and the use of stronger doses.

Dealing next with treatment by excision, he first referred to operation on the mediastinal portion of the œsophagus, remarking that very few patients had survived this procedure more than two or three days. Four chief factors accounted for this gloomy result. The first was a rapid infection of either pleura or mediastinum, or both, and, secondly, the œsophagus was so straight that when it was mobilised there was no slack. Also the absence of a serous coat and the softness of its walls militated against sutures taking a firm hold. Finally, a reconstruction of the œsophagus after resection for carcinoma was a matter of great difficulty. He knew of only three patients having recovered from operation undertaken for removal of carcinoma in the mediastinal part of the œsophagus, and these he described. A study of those cases led Mr. Steward to the conclusion that it would be justifiable to attempt operation in an uncomplicated case in which the growth seemed to be small and localised to the œsophagus if the patient was in good general condition. For a growth in the lower third of the œsophagus he considered that Lilienthal's operation was more suitable, Torek's being the best when the disease was in its middle third. He had explored three cases of limited œsophageal carcinoma, with the object of removal, in people aged 51, 62, and 53. The anæsthetic employed was intratracheal oxygen, and was a very satisfactory one. In two of the cases several intercostal nerves were blocked by using a 1 per cent. solution of novocaine. All three, unfortunately, ended fatally. Yet in some ways the results were encouraging, for the diagnosis of the condition and the selection of the cases erred very slightly.

His deliberate view, Mr. Steward concluded, was that as technique improved better results from operation could be looked for, as the symptoms of the disease were straightforward and distinctive and it was not difficult to decide when a case was suitable for operation. For a long time the disease did not extend beyond the œsophagus. Excision of the carcinoma was a practical proposition, and it was not unreasonable to hope that the history of the surgery of the other organs might be repeated in the case of the œsophagus.

Discussion.

Mr. H. S. SOUTTAR disagreed with Mr. Steward's criterion of operability—namely, that there should be no secondary growths. How often did one find a secondary growth within a year of the origin of carcinoma of the breast? How many cases of carcinoma of the œsophagus survived a year? He went through the records of 18 post-mortem examinations of such cases at London Hospital, and in each it was evident the growth had reached an inoperable stage, for inside the thorax and around the œsophagus the condition was chaos. The patients had died soon after entering the hospital, some of them from gastrostomy. The average duration of their symptoms had been 4·7 months. Mostly, when these cases were first seen by the surgeon, they were already in the penultimate stage. With regard to the statement that better results would ensue if patients were seen earlier, it must be remembered that a man who could not swallow came for advice at once. Some cases had come to him within a few days of the onset of their troubles, and the œsophagoscope revealed a condition which was staggering. Some died before they had any œsophageal symptoms. He contended that in the vast majority of cases by the time the surgeon saw the case operation was out of the question; it was not worth attempting. Most of the cases, in men, were between the ages of 65 and 70, and were bad operation subjects. In the decade 1911–20 16,000 deaths were reported to have occurred from this particular disease in England and Wales; and in the last 30 years three instances of cure had been reported. But were they cured? Was it a cure to have portion of the œsophagus removed and not to be able to swallow?

Mr. Souttar then dealt with the question of relieving these patients and enabling them to eat meals by means of tubes. Hitherto, he said, intubation only aimed at enabling the patient to swallow fluids, and he thought that if larger tubes were used solids such as passed along after proper mastication normally could be negotiated. First, œsophagoscopy must be carried out, and he had had the ordinary œsophagoscope modified so as to carry tubes of varying sizes. Each diameter tube he used was supplied in lengths of 10, 14, and 18 in. In the average male the tubes passed easily. No attempt should ever be made to pass a tube without the aid of the œsophagoscope. He used a modification of Jackson's bougie, as it enabled a view of the tip to be obtained, and it could be passed into the small opening of a stricture. After the stricture was once passed it could easily be opened up, until 11 mm. in diameter was achieved, then a tube of reasonable diameter could be introduced for the purposes of feeding. These tubes were made of German silver wire, in a spiral, which prevented their regurgitation. The tubes seemed to give rise to no trouble, and the immediate result was very satisfactory. Usually the tube was inserted one afternoon, and nothing but water was taken that day; then next morning it was possible to take a breakfast of eggs, fried bread, bread-and-butter, and coffee, while for midday pounded fish and potatoes could be taken. In 26 cases which he had followed up after intubation the average duration of life was 5·3 months. The disease was very relentless, and if a man of 70 years of age could be enabled to swallow a meal in this way it was a very important matter to him. Still, he hoped with others that in a small percentage of the cases it would be possible at a future time to resect the growth with a prospect of cure.

Mr. WALTER G. HOWARTH said he had seen hundreds of cases of cancer of this region, and he had tried all the recognised means of dealing with them, particularly by the radium treatment of the œsophagus, not only with small doses, repeated at intervals of six weeks or so, but by the intensive treatment of Guisez. Looking back, he confessed to a feeling of profound disappointment concerning radium treatment for this disease. He had also, more recently, used diathermy for these cases, but it was difficult to provide a proper electrode; the best he knew was that invented by Mr. A. J. Wright, of Bristol. Diathermy, however, only dealt with the superficial part of the growth, it impinged on the lumen of the œsophagus, whereas many of the growths were intramural and involved the œsophageal wall secondarily. His conclusion was that Mr. Souttar's method was probably the best available at present for dealing with these cases, enabling the patient to live a more comfortable life and take food with some satisfaction. Without such measures many patients could not swallow even liquids, and their saliva was a constant source of intense misery. He had used Mr. Souttar's tubes from the time that gentleman first introduced them, and he gave an account of his experiences with them. With regard to attacking the carcinoma externally, he, the speaker, had removed an œsophageal carcinoma from the upper end of the œsophagus, and brought up the œsophagus to join the cut end of the pharynx to it. That patient was still alive, two years after the operation. There remained a marked cicatricial stricture at the line of suture, but through the minute aperture the patient managed with fair comfort. As to the removal of carcinomata of the middle of the thorax, it was very difficult to say what would be an operable case and what would not, and what was its lower limitation; bismuth meals followed by X ray examination did not help very much. When one of Mr. Souttar's tubes became blocked, small drinks of hydrogen peroxide and water, and abstinence from food for a day, usually resulted in a clearance.

Mr. A. L. APEL attributed great importance to dealing with the teeth of these patients before attempting operation, especially for pharyngeal and upper œsophageal growths. He had seen cases in which at first operation seemed out of the question, but when the patient had been rendered edentulous the growth decreased remarkably. At the Cancer Hospital gastrostomy had been done in a very large number of cases, all under a local anæsthetic. In none was there an immediate mortality, nor the development of broncho-pneumonia. It was simple to measure the extent of the growth in these cases. The patient was placed either on his right side or in the Trendelenburg position, and while so suspended he was given an opaque drink, and the X ray plate was exposed during the act of swallowing, and another when the meal came to a standstill. If the growth was not more than an inch in extent and had not grown into the wall of the œsophagus, probably it was in an operable condition. He had operated upon three cases through the posterior mediastinum, by the method originally suggested by Mr. Wilfred Trotter. One, which he related, lived 11 months, and with no more inconvenience than that caused by continual dilatation. Gas and oxygen, under considerable pressure, was the anæsthetic employed, and the wound in the thorax was closed in an air-tight fashion, so that the lung was never collapsed afterwards. In eight cases he had used the Souttar tubes; three had an œsophageo-tracheal fistula in a fortnight, four swallowed the tubes straight away, and one formed a mediastinal fistula. He made a strong plea for further attempts to really cure this condition. Patients went to their own practitioner, to a physician, or to the nose and ear surgeon, and by the time the surgeon was called it was time to have a gastrostomy. If nothing was done until patients had difficulty with soft solids progress would not be made.

Mr. T. B. LAYTON expressed his agreement with the contentions advanced by Mr. Souttar, except that in the case of a fairly young patient with this disease, otherwise fit, it was worth while to see what operation would do for him. He also agreed that it was always wisest, before doing anything, to render the patient edentulous.

Mr. E. D. DAVIS pointed out that the early diagnosis of carcinoma of the œsophagus was a very difficult matter, especially as dysphagia was often a very late symptom. He had done 70 or 80 œsophagoscopy examinations for carcinoma, and only one of the cases looked like an early one; all the others were advanced, and they died within eight months. He had had a few cases in which Mr. Souttar's tubes proved successful, and in those the growth was in the middle of the œsophagus. If the cancer was at the cardiac end of the œsophagus, it was difficult to place the tube, and one could not be sure whether or not there was coexisting carcinoma of the stomach. The tube was not very successful for them.

The PRESIDENT congratulated the Section on this discussion. His own experience of the disease, from the standpoint of cure, was somewhat gloomy; he would like to share the enthusiasm felt by Mr. Steward and Mr. Abel, and they were probably right, for in regard to the surgery of other organs there was at first a gloomy outlook, until some pioneer came along and, by his keenness, showed what could be done. If improvement was to come in regard to this serious disease there must be earlier diagnosis. He agreed that early in the condition only in a few cases was there any noticeable difficulty in swallowing. On talking to patients after the disease developed it was easy to ascertain that some time before they sought advice they had been conscious of vague pains in the chest, perhaps with a feeling of pressure on the sternum, which were attributed to "indigestion." Who would go to a surgeon, even to a practitioner, for that? He had had no personal experience of Mr. Souttar's tubes, but he had seen many tubes used, and there seemed to him to be something essentially unsound in endeavouring to dilate a carcinomatous stricture. If a foreign body was in close contiguity with a carcinomatous surface, there must be irritation, and from that there would be inevitable reaction. Still, there was undoubtedly

relief of the swallowing difficulties. He was glad of the agreement that the best palliative treatment was provided by gastrostomy, even though the mortality from it was high, which was largely because it was done on every kind of case. Prejudice existed against that operation, not only among the public, but in the profession; doctors said they would rather die than have it done on themselves. In saying that, only the standpoint of the healthy man was being expressed. From the humanitarian point of view, he thought gastrostomy had a great value. He agreed it was the rule for a squamous epithelioma to remain localised for quite a long time; the disease in the œsophagus spread more by contiguity than via lymphatic channels; even in late cases there was not a great deal of glandular enlargement. Patients of his with this condition had never lived beyond two years after the disease was discovered, he could not equal Mr. Steward's five years. He had every admiration for the attempts being made to deal with this disease surgically and with the cure of the condition always in mind.

Reply.

Mr. STEWARD said he had not used Souttar's tubes. Their success in the originator's own hands showed what could be done by intubation in inoperable carcinoma of the œsophagus. He did not himself suggest that every case should be operated upon; but there existed cases in which the growth could be diagnosed while yet it was limited to the œsophagus and in the absence of any signs of secondary deposits. He maintained that if gastrostomy was done early, the patient would lead a comfortable life, more comfortable than if he were wearing a tube. The reason the operation had a bad record was because it was so often used as a last resort for patients in danger of dying of starvation.

SECTION OF OTOLOGY.

THE first meeting of this Section was held on Nov. 6th, when Dr. DAN MCKENZIE, the new President, occupied the chair and opened a discussion on

Diseases of the Outer Ear.

He dealt with certain forms of dermatitis which interested the aurist clinically either because of a difficulty in diagnosis or because of a resistance to treatment. The external auditory meatus was, he said, the only skin-lined cul-de-sac in the body, and it might be the function of the cerumen to ensure the removal from it of the shed epidermal scales, which might otherwise cause symptoms by their accumulation. Furunculosis was a common as well as painful condition, and usually it could readily be diagnosed from mastoid suppuration by the painful swelling of the meatal wall, the tenderness of meatus and auricle, the obliteration of the auriculomastoid sulcus, and the absence of tenderness when compressing the mastoid. Yet cases occurred which presented difficulty in this regard. Sometimes furunculosis, by extending backwards, caused a subcutaneous mastoid abscess closely simulating one due to mastoiditis. The patient might have had previous attacks of middle-ear suppuration, and the membrane might be obscured. Diagnosis must in such cases be postponed until the abscess had been opened. Sometimes, also, simple œdema over the mastoid process might be associated with what seemed like true mastoid tenderness, and it was not clear whether mastoid suppuration was associated with the furunculosis. In such cases the safest course was to open the mastoid process and make an examination. His experience with vaccines for furunculosis had been very variable, and he asked the views of members on the point, and what effect they found from the intramuscular injection of manganese collosol. Sometimes a meatal furunculosis started a spreading dermatitis, and even a cellulitis of the neck and face. Desquamative external otitis was a condition in which the epidermal lining of the canal was in a sodden condition and was shed in continuous sheets, giving the appearance of a cholesteatoma in the antro-tympanic region. It was usually confined to the bony meatus deep to the isthmus. If this condition lasted it caused absorption of bone and dilatation of the deep meatus. The removal of this pultaceous material was, owing to the pain, tedious and difficult, especially when the walls were ulcerated in addition. Syringing was not usually efficacious, and the material must be removed piecemeal by the aid of a spud. Otomycosis was another condition met with not rarely, the aspergillus being the commonest, the mucor mucedo a rarer form. There might be no symptoms until the Malpighian layer of the cutaneous lining was reached. Neglect sometimes led to ulceration. Primary diphtheria of the external meatus had lately occurred in London, and was said to be not uncommon. The chief symptom was severe pain, and a serous discharge was present. In the two cases of it which the President saw the diphtheritic membrane adhered to the deep meatal wall and to the intact tympanic membrane. Diagnosis of the disease was arrived at from culture, and both cases cleared up after one dose of anti-diphtheritic toxin. Constitutional symptoms were absent. An infrequent meatal affection was syphilitic condyloma. In this condition the conchal edge of the canal presented a number of small red papules with linear excoriations, and a painful discharge. Chronic eczema of the meatal lining was often very obstinate, and the help of the dermatologist would be welcome in regard to it, as it was sometimes attended by difficulties of both diagnosis and treatment. It was necessary to exclude suppuration of the middle ear, which might be the cause of the infiltration. When the meatus alone was to blame the discharge was never purulent. Sometimes chronic eczema of the meatus and auricle was of seborrhœic character, and then the scalp would be found to be also involved by it.

Dr. A. M. H. GRAY read a paper entitled Common Affections of the Skin of the Outer Ear. He said inflammations of the skin were reactions to the action of irritants, those reactions only differing in the case of the ear owing to the position and character of the skin. Dermatologists now classified skin affections according to their causative factor, rather than according to their clinical appearances. Many different irritants caused similar reactions, and in some cases the irritant answerable could not be traced. Two kinds of eruptions had to be dealt with, those more or less specific to particular irritants, and, secondly, those due to varying types of irritants, which could, therefore, be spoken of as group reactions. Eczema was a term he applied to a superficial serous inflammation of the skin, which varied according to the irritants applied, or according to the sensitiveness of the particular skin being dealt with, there being present no characteristic by which the causation could be determined. If the kind of irritant was evident, such as solar rays, it was named solar dermatitis, not solar eczema. There could be no doubt as to the great value of X rays in the treatment of chronic inflammatory lesions, whether caused by a septic organism or by causes not yet known, also in conditions due to definite chemical or physical agents. The rays should be given in small doses. The same treatment was of great value, too, in chronic fibrous thickenings about the ear. But when a very acute inflammation was present, or pus formation was in progress, the rays should not be used. X rays should not be applied over long periods for the chronic conditions referred to. In his experience, the best results followed three or four doses of ½ Sabouraud pastille at weekly intervals. If a further treatment at the end of two months did not cure the condition it was probable that the limit of efficacy of the rays for that particular case had been reached. He did not see why an instrument could not be devised which would make possible the safe local application of X rays to the depth of the meatus. Very probably small doses of radium would be also efficacious for the same conditions as X rays benefited, but he did

not know of it having been tried. Furunculosis of the meatus was, he thought, probably due to a lowering of the resistance of the skin to staphylococcus. Sabouraud concluded from investigations he made that it was useless to give vaccines in cases of superficial folliculitis, but that they might be useful in perifollicular abscess cases in which the organisms had passed outside the follicle. The speaker, however, did not quite agree with that authority, because he thought another factor must be considered, and it was questionable whether giving vaccines subcutaneously was a satisfactory treatment of these conditions. Mostly boils were a recurring condition, and the sufferers from them had a staphylococcal hypersensitiveness; desensitisation could not be carried out by giving subcutaneous injections of an antigen, it must be given intradermically in very minute doses. Dr. Gray dealt with a number of other skin conditions.

Dr. F. C. ORMEROD read a short paper on Intractable Dermatitis of the Pinna and External Auditory Meatus which was secondary to chronic suppuration of the middle ear. The paper was based on 33 cases in which inflammatory conditions of the external ear followed suppurative otitis media of from eight to ten years' duration. The treatment followed was the use of various pigments and ointments, such as calamine, mercury, and flavine. In cases of stenosis subitol was used, but this was contra-indicated when eczema or fissures were present. Among the paints used were silver nitrate in water, silver nitrate in spirit, ether nitric, and salicylic acid in liquid paraffin.

A general discussion followed.

Mr. F. J. CLEMINSON read a paper on

Deafness Associated with Fragilitas Ossium

and showed a patient with the condition, a young woman aged 23, who had been deaf since she was 13 years of age, and had recently been getting worse. No specific disease could be held to be the cause, and the onset had been very gradual. She had broken her right arm three times and her leg once. There was a deformity of the face, due to a depression of the left maxilla from before backwards, dating from birth. Her sclerotics were of the greyish-blue colour usual in the condition.

This paper was also fully discussed, as were a number of interesting clinical cases.

SECTION OF LARYNGOLOGY.

A MEETING of this Section took place on Nov. 5th, under the presidency of Dr. ANDREW WYLIE.

Effects of Nerve Anastomosis on Vocal Cord and Diaphragm Movements.

Sir CHARLES BALLANCE gave a cinematograph demonstration of some experimental work which he had been doing, in conjunction with Mr. LIONEL COLLEDGE, showing that paralysis of vocal cords and diaphragm could be cured by anastomosing the recurrent laryngeal nerve with the phrenic nerve. The subjects of the experiment were a dog and a monkey. In the dog, on its right side the phrenic root from the sixth cervical was divided and an end-to-end union of it effected with the recurrent laryngeal. On the left side the trunk of the nerve was completely divided, and then united end-to-end with the recurrent laryngeal. To prevent diaphragmatic palsy, he divided the descendens noni and united its proximal cut end to the distal cut end of the phrenic. The film showed the cords now in full and vigorous movement, and the diaphragm had recovered its contractility. In the case of the monkey, on the right side the cut end of the recurrent laryngeal nerve was united to the side of the phrenic, while on the left side the phrenic nerve was divided and its proximal cut end was united to the distal cut end of the recurrent laryngeal. Every time the operation had been done on animals it was a success, and the research showed that one could cure paralysis of the muscle of the diaphragm by uniting the phrenic to the descendens noni, and cure paralysis, or threatened paralysis, of the depressor muscles of the hyoid and larynx by making an end-to-end union of the cut end of the descendens noni with the lower side of the hypoglossal nerve.

Dr. E. B. BARNES (Northampton) related a case in which Sir Charles Ballance did this operation of union of recurrent laryngeal to phrenic. The patient was a lady aged 52, who sustained an operation on the thyroid in 1925, and following it had aphonia and very severe dyspnœa. Last June Sir Charles Ballance anastomosed the recurrent laryngeal to the phrenic on one side; and about a month later the other side was similarly dealt with. At the present time the patient had well-marked movement of the right cord, and on the left side the arytenoids could be just seen. There had ensued recovery of the diaphragm on both sides.

Sir DAVID FERRIER, who had witnessed the operations and the gradual return to normality, paid a high tribute to the skill of the operations and the significance of the investigation.

HARVEIAN SOCIETY.

THE MANAGEMENT OF CONTRACTED PELVIS: DISCUSSION.

A MEETING of this Society was held on Nov. 4th, Mr. LAMING EVANS, the President, in the chair, when Mr. A. W. BOURNE read a paper on this subject, which is printed in full on another page.

In the discussion that followed, Mr. EARDLEY HOLLAND said that he never did Cæsarean section on the "failed forceps" case; he always perforated. To perform Cæsarean section was gambling on two risks—the chance of infection and the chance that the fœtus had received some injury. Cerebral hæmorrhage in a fœtus in utero produced no visible effect; the heart went on beating, but a possible result of Cæsarean section was a child in white asphyxia which could never be resuscitated. Cerebral hæmorrhage caused respiratory paralysis, and the life of the fœtus in a failed forceps case was not of any value. Of those patients with slight pelvic contraction who were deliberately allowed to go into labour, 80 per cent. delivered themselves or were delivered with a very easy application of forceps. A normal pelvis was constructed to transmit a 7½ lb. baby, but could in most cases allow the passage of an 11 lb. child; it was, therefore, not unreasonable to expect a slightly contracted pelvis to deal with a normal fœtus. Since considering this "reserve capacity" of the pelvis he had largely given up induction of labour. Many obstetricians seemed to be afraid of the "test labour." He had studied the results of induction in his own hospital, judging its necessity by the length of the second stage and the degree of moulding, and concluded that 80 per cent. of the inductions in contracted pelvis were unnecessary. The difficulty of selecting cases for induction was very great; it would be better to set to work and find out how to tell during labour whether a given head would go through or not. To allow moderate cases of contraction to go into labour demanded a much higher standard of midwifery, but was a better course of action. The fœtal and early neonatal mortality of induction cases was 12 per cent., and if the children were followed up to the end of the first year it would probably be higher. He regarded induction for post-maturity as most meddlesome midwifery; it was impossible to tell when labour was really due. Each fœtus should be judged by its size compared with that of the pelvis.

Mr. CLIFFORD WHITE said that he strongly believed in induction. No patient was interested in what happened in 80 per cent. of cases of induction; she wanted to know what was going to happen to herself, and no husband would appreciate a "test labour" on his wife. In these days of late marriages the first labour might well be the last, and, moreover, if the

first were made very difficult the patient might see to it that she never had another. It was the duty of the obstetrician to see that the first delivery was easy and swift. If he found that the head was not well into the brim at the thirty-sixth week it was his custom to see the patient again at the thirty-seventh and, if it would not engage, to prepare for induction, and also to induce labour in any multipara who was ten days over time. The fœtal mortality was not considerable if the baby could be given careful attention. It was a good thing for the doctor not to carry axis-traction forceps with him, as if the head were high he could counter the protests of the relatives by saying that he must fetch or send for special instruments. By the time they came the head would probably have moulded through the brim. "High forceps" were to be avoided if any process of delay would make it possible. If they were used friends should be told that the manœuvre was to enable the patient to deliver herself more easily, then if it appeared that strong traction would be needed to deliver she could be left to deliver herself without causing domestic trouble. An irritated uterus often resulted from repeated intra-uterine manipulations and was apt to be mistaken for tonic contraction, which was, in fact, very rare. The irritation would subside after morphia and an hour's rest. He agreed that self-delivery was the best method after craniotomy and that craniotomy forceps were very dangerous. He would never do a Cæsarean section if forceps had been applied, and did not like it after a "trial labour." Cæsarean hysterectomy was useful for elderly primiparæ when the uterus was probably infected.

Dr. G. DE BEC TURTLE agreed that very few cases of severe contraction were encountered in general practice, the commonest form being the "generally contracted." Walcher's position was of some value in increasing the size of the outlet. The post-mature child was not uncommon and was better induced. The high forceps operation was very difficult; when it succeeded it was best to remove the instruments after bringing down the head and then leave the patient to deliver herself.

Dr. J. THORESBY JONES remarked that out of thousands of cases he had attended he had only had two or three where operative assistance had been necessary.

Dr. W. JAGGER said it was strange that our crass ignorance of midwifery should produce such fortunate results; experts still differed as to the best time and means for interference. The patient herself was generally willing to go on for a time if her pains could be made tolerable, but the anxiety of relatives had to be appeased; cases in practice were not purely scientific. In his opinion early interference was likely to do harm, and it was better to give morphia and wait.

Prof. LOUISE MCILROY agreed that in practice the husband was the chief indication for forceps. She had found morphia most valuable, as in addition to relieving pain it helped to dilate the cervix. She did not agree with Mr. Eardley Holland about induction, and asked what the results were when induction was not performed. In her series of some 6000 hospital cases she had found that Cæsarean sections were gradually disappearing since the use of induction for disproportion. Out of this number only 4·27 per cent. had been forceps cases and there had been no craniotomies. High forceps should never be applied. Imperfect flexion of the head was the cause of most of the maternal damage and fœtal mortality. She induced every post-mature case and the results were good. She regarded the whole discussion as really out of date, since all the cases considered should have been recognised before labour. The vital factor was not a skilful obstetrician at the time of labour but good antenatal care.

Mr. BOURNE, in reply, said that although ideally the treatment of contracted pelvis in labour should be out of date, it was not so found in fact in obstetric hospitals.

MEDICAL SOCIETY OF LONDON.

THE meeting of this Society held on Nov. 8th under the presidency of Sir HUMPHRY ROLLESTON was given up to a discussion on

STERNAL PAIN.

Dr. JOHN PARKINSON said that some might prefer the term substernal, others might choose retrosternal, but the actual words were not of much moment if it were agreed that the patient in complaining pointed to the sternum or passed his hand directly across it. The notion held by the patient as to the depth of his pain seldom gave the physician guidance of any value. He preferred to speak of sternal pain rather than precordial pain, as the latter often merely meant that the pain was felt in the region of the heart, and the apex beat was usually meant. In making a note of symptoms it was better, he thought, to speak of sternal pain, left supramammary pain, and left submammary pain. The thorax, contrary to the abdomen, contained only a limited number of organs. The lungs, being lateral organs, were more likely to give lateral pain, as in pleurisy. Acute tracheitis or bronchitis produced a characteristic soreness behind the sternum. On inspection there might be evident a swelling, a tuberculous abscess, or a pulsating swelling such as a pointing aneurysm. Less frequently this swelling would be found to be a gumma, secondary malignant disease, or a lymph granuloma. Intrathoracic tumours were likely to give other symptoms in addition to sternal pain. In acute pericarditis there might be pain and discomfort, or it might be absent. In early infective endocarditis there might be pain at the lower end of the sternum. In chronic valvular disease, if rheumatic, there was seldom felt more than an aching or a discomfort, and usually the situation of this was below the left breast. Patients with heart failure who persisted in walking about might complain of a feeling of pressure at the lower end of the sternum or in the epigastrium; this pain was worst when they did walk, and this was found to be due to a congestive distension of the liver.

The most important form of sternal pain was that produced as the main or sole symptom in a particular group of cardiovascular diseases. If this pain had a direct relationship to effort, it always meant serious cardiac disease. The degree of the pain varied. It might be discomfort or a definite gripping pressure, though rarely the constriction seemed to encircle the chest; the pain was mostly in front, at the mid-sternum or the junction of middle and upper sternum, its area seldom exceeding the width of the hand. The pain might overflow down the left arm and reach the wrist; there might also be pain in the shoulder, jaw, and neck. Usually this pain ceased when exertion stopped. With advancing disease even slight exertion, such as dressing and undressing, might start the pain. This close relation to exertion almost infallibly pointed to the pain being cardiac. Nervous patients rarely included the sternum in their descriptions of the pain they felt; they spoke of an aching below the left breast. If this was persistent and severe it extended upwards to include the left supramammary region.

Dr. Parkinson said they had been asked to believe that angina pectoris was a disease, yet the greatest authorities had differed in their statements as to its pathology, and even as to the organ involved. The speaker therefore counselled considering it as a symptom. Sternal pain cases would include the vast majority of those of angina, but admittedly angina pectoris might be manifested as a left supramammary pain, extending into the arm and not including the sternum, though this was so in only a minority of instances. Submammary pain alone was practically never indicative of angina. With those exceptions, the speaker thought the earliest and most diagnostic symptom of angina was sternal pain which was felt on exertion. Some thought the term angina should be restricted to cases in which the attacks were strictly paroxysmal.

When the physician had decided that a sternal pain was cardiovascular in origin, he had not reached a proper diagnosis. The disease was cardo-aortic, and what remained to be decided was what particular disease of heart and aorta was operative. It was usually one of four, which could generally be recognised. First, syphilis of the heart and aorta, which was a common cause of sternal pain in men of 35 to 50 years of age, and in them a positive Wassermann, or perhaps a clear history of syphilis, would settle the diagnosis. A blowing aortic systolic murmur, and still more a diastolic, or an accentuated aortic second sound, in the absence of other causes for this, was highly suspicious of syphilis. Sudden death was not unusual in these cases. Still, by treatment, especially early treatment, there was reason to hope for a cure. The second condition was atheroma of the aorta and coronary arteries, and this was a commoner cause of sternal pain than syphilis, partly because sternal pain was more common in elderly people. Though the brachial and radial arteries might be hard and tortuous, the blood pressure might be nearly normal. Diagnosis of this from arterio-sclerosis was largely a process of exclusion. The prognosis was uncertain. In the absence of complications such as cerebral arterial disease, coronary thrombosis, or congestive cardiac failure these patients might live for years, and suffer more from their general disability than from the pain itself. A subdivision of the last-mentioned group was coronary thrombosis, the recognition of which was largely due to American workers. Subjects of this were rarely syphilitic, and nearly always the basis of the condition was a coronary atheroma. The attacks of coronary thrombosis were what were formerly called the status anginosus. So severe and prolonged might this pain be, and so distinct the accompanying shock, that it simulated in many cases acute abdominal conditions, and hence had a surgical interest. This condition had been mistaken for perforation of a gastric or a duodenal ulcer, and for acute pancreatitis. Often apart from any exertion —sometimes in the middle of the night—these patients might have severe angina pectoris, but it did not seem to the practitioner to harmonise with angina pectoris because the pain was too prolonged and had accompaniments which were foreign to true angina, such as a fall in the blood pressure, sweating, and vomiting. Ordinary cardiac failure might supervene, with dyspnœa, and even swelling of the liver and physical signs in the bases of the lungs. In coronary thrombosis the pulse was often notably affected. He thought there had not yet been given due recognition of the importance of coronary thrombosis; it was, indeed, the first step in the logical subdivision of angina pectoris into a number of classes, as the present position and classification of the subject could not be regarded as satisfactory. The fourth category he had to mention was high blood pressure. A small proportion of patients with high blood pressure complained not so much of dyspnœa as of sternal pain. Presumably the coronaries were first affected. In sternal pain from high blood pressure the prognosis, in regard to the danger of sudden death, might be considered to be better, but it must not be assumed that these patients would live longer. No examination could nowadays be held to be complete in chest cases unless the radiographic and cardiographic was included. The inaccessibility of the thoracic aorta to ordinary clinical examination was not yet recognised, but X rays could give valuable information as to heart enlargement, while the electrocardiograph gave increasing information about the state of the myocardium, of which the coronary arteries were the servants.

Summing up his thesis, Dr. Parkinson said that sternal pain coming on with exertion was usually due to cardio-aortic disease, and if severe and prolonged, even apart from exertion, it usually indicated coronary thrombosis. Sternal pain was not synonymous with angina pectoris, but it could be held to include most of the cases so-called. The diagnosis might be completed by deciding what pathological lesion was the cause of the pain. If the use of the term "sternal pain" or "cardiac pain" were more general, even at the expense of dropping the term "angina pectoris," he thought it would result in an earlier, perhaps a more certain, diagnosis of cardio-aortic disease.

Mr. A. J. WALTON then made the communication on the surgical diagnosis of sternal pain which appears on p. 999 of our present issue.

Discussion.

Sir JOHN BROADBENT said that 30 years ago cases of angina pectoris were always attributed to "fatty heart." Now many thought there was no true case of angina which was not associated with coronary sclerosis. Sir James Mackenzie, however, said that it was due to a failure of contractility, and that had been the speaker's own experience. In the cases of very large hearts associated with valvular disease there was seldom cardiac pain, and the anginal pain was invariably associated with exertion. There were two definite classes of cases. The heart issued a signal of distress because it was faced with a call for effort it could not give, and this inability might arise either from coronary sclerosis or from inability to supply the blood needed to deal with the situation. He had seen cases in which, in the absence of syphilis, by giving attention to the mode of life and taking matters easily, there had ensued a good recovery and a further 10 or 15 years of life. But the cases of the kind in which there was a positive Wassermann reaction were, in his experience, almost invariably fatal. He had seen cases in which there was gastric pain definitely related to the taking of food, and the seat of intense pain was the sternum. There was no more difficult class of case to give a prognosis upon than that of sternal pain, because of the variety of more or less obscure conditions which might give rise to it.

Dr. A. BLACKHALL MORISON said the only cases pertinent to the present discussion in which there was danger of unnecessary surgical intervention were those in which there was a sudden attack of coronary thrombosis, for there in addition to its suddenness, the pain was usually central and epigastric. These cases always seemed to be fatal. It was remarkable how few heart cases had been thoroughly examined post mortem; often if one structure was investigated, another was omitted from the survey. He thought it was not so much blood pressure as the blood stroke which induced the attacks of angina, and his habit had been to divide anginal cases into direct and indirect.

Dr. E. P. POULTON referred to cases in which the pain was of a dyspeptic character, and was produced in the œsophagus from mechanical causes. The heart, he thought, had the power to produce similar reflex pain in the œsophagus, and this would, perhaps, explain the belief of one authority that all cases of angina pectoris originated in the œsophagus. The pain of heart-burn could be shown to disappear with peristalsis, and some of the pains described in the present discussion were mitigated by the patient swallowing. Examination of the movements of the viscera under X rays after giving opaque food seemed to confirm the views he was advancing. Experiments were made by placing an inflated bag in the œsophagus, and showed that the pain was a tension pain. Contractions were found to abolish pain.

Dr. J. A. RYLE combated the idea that distension of a viscus caused pain. When a diseased stomach, gall-bladder, or kidney become distended, there was usually a lessening of the pain originally present; it was when a hollow viscus was trying to overcome obstruction that pain, the pain of tension, was felt. There seemed good reason for believing that the pain of angina pectoris was of arterial origin, and for saying that it was produced in the coronary arteries. There existed a perfect analogy in the case of so-called intermittent claudication; in both there was pain of great intensity caused by effort and disappearing when rest was taken, and in the latter there was good reason for believing the pain was produced in the artery. When pyloric stenosis caused pain, somatic signs were absent.

Dr. PARKES WEBER agreed as to the importance of subdividing cases which formerly were grouped under

the one term angina pectoris. He suggested that a good working division was into cases due to obstruction in the coronary arteries and those not so due. In the living patient such a subdivision was admittedly difficult, but it could be attempted. He did not think cases associated with syphilis should be put into a separate group. He proceeded to discuss the analogy of angina pectoris with cardiospasm.

Dr. D. M. BARCROFT spoke of cases in which from some simple cause the patient had a feeling as of a gripping at the heart. Mostly these yielded to trinitrin, but he would like to know how they could be dealt with, as these people suffered badly from lack of confidence through fearing an attack.

Dr. W. W. STOCKER referred to pains originating in the stomach which were felt behind the sternum, and related a personal experience.

Sir CHARLTON BRISCOE discussed the various causes which could give rise to the same kind of pain, and showed, by lantern slides, composite charts of seats of pain in various conditions.

Dr. JOHN FAWCETT said that all recognised the various anatomical conditions associated with angina, and their complete absence in some cases, but until some explanation was forthcoming as to why angina pectoris appeared so frequently in one grade of society and hardly ever in hospital patients, there must remain an important region yet un apped. There must be causes at work in the production of angina pectoris which were not covered by present knowledge.

Dr. H. A. DES VŒUX contended that the person most favourably placed for observing angina was the general practitioner. Yet it was seldom the general practitioner had the opportunity of knowing what was the end result of his cases, even when they terminated in hospital, where there were facilities for post-mortem examination. He gave an account of some cases he had encountered.

Reply.

Dr. JOHN PARKINSON said there was much evidence favouring the idea that the myocardium was a possible source of sternal pain. He agreed that the prognosis in syphilitic cases might be very serious. The explanation as to why hospital patients did not have angina pectoris was beyond him, and he had not seen any solution of that fact.

Mr. WALTON said he had found sympathetic nerve division very unsatisfactory as a measure for mitigating the pain. It was his experience that in the early stages of acute dilatation there was a definite severe epigastric pain, which passed when the tension of the muscle ceased.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

A MEETING of this Society was held on Oct. 28th, when Dr. C. W. BUCKLEY, the President, occupied the chair, and Dr. H. WARREN CROWE read a paper on the basis and practice of

Vaccine Treatment in Chronic Arthritis and Rheumatism.

He said that the Rheumatism Committee appointed by the Ministry of Health had divided arthritis into :— 1. Rheumatoid arthritis : a general disease occurring in younger people, in which nerve symptoms predominated, and bony changes were inconspicuous. 2. Osteoarthritis : a local disease occurring in more elderly people, general health good, bony changes marked, and usually confined to the larger joints. 3. Arthritis, not classifiable : an artificial group which was put in to help the panel practitioner when confronted with an aberrant case. 4. Gout : from this communication gout wae excluded, since it was not amenable to vaccine treatment.

Medical opinion was steadily veering towards the view that fibrositis and chronic arthritis, excluding gout, were microbic in origin. The question that next arose was, What were the microbes involved ? Evidence had accumulated to show that these were of two main groups, streptococci and staphylococci. The evidence for the former rested on a great many considerations, perhaps the chief of which was the fact that practically all infective foci contained streptococci. These were essentially of the non-hæmolytic type. The evidence for staphylococci was rather more direct, inasmuch as these organisms were found to grow in pure culture from pieces of bone and tissue obtained from open operations on arthritic joints ; whereas, in a large number of control cultures of bone and other tissues, both normal and diseased, no staphylococci had been found. The staphylococci isolated were of the variety, *Staph. epidermidis albus ;* they had been called by the speaker *Micrococcus deformans.* A. E. Wright had shown that streptococci and staphylococci were the only organisms which could live in blood serum ; it was for this reason that he had called them serophy s. Dr. Crowe suggested that whilst streptococci were the chief infecting organisms in fibrositis and osteoarthritis, and *M. deformans* in rheumatoid arthritis, in the great majority of cases both types of microbes were involved. In this way were to be explained the " arthritis, unclassifiable " of the Rheumatism Committee. This group could be more rationally called mixed arthritis. Theoretically, these diseases should form an ideal ground for treatment by vaccines. Yet medical opinion had been definitely adverse to this form of treatment ; this was not pure conservatism, but was due to the number of failures which had occurred in practice. It seemed to Dr. Crowe that there were several reasons for these failures, and that if steps were taken to improve the technique there was no reason whatever why the vaccine treatment of rheumatism and arthritis should not prove to be a brilliant success.

The causes of failure were, first, that staphylococci had never been recognised as being of importance in these conditions. Secondly, that the streptococci were an extremely diverse group, members of which were not capable of differentiation by ordinary methods. Many of these were so delicate that they required very special media for their cultivation. Also they died rapidly on exposure. These facts accounted for the inefficiency of so many streptococcal vaccines prepared in clinical laboratories. Once recognised, however, these difficulties could quite easily be surmounted. Thirdly, rheumatic patients during treatment might suddenly become sensitive to vaccine. If this were not recognised failure often resulted. Fourthly, there was a mistaken idea that reactions were beneficial. Nothing could be further from the fact. Much smaller doses, therefore, had to be given than those usually employed. Lastly, it had not been sufficiently realised that treatment must be prolonged and most persevering. For these various reasons, then, vaccine treatment had not often given satisfactory results.

The Practice of Vaccine Treatment.

As in all other special lines of treatment experience was required. The speaker suggested that practitioners should take simple cases of mild rheumatism and treat them with stock vaccine. Panel practitioners had an excellent opportunity for doing this. After a certain amount of experience more difficult cases would gradually be undertaken, and finally even the most chronic cripples might be brought into the net. Until plenty of experience had been gained it was inadvisable to give vaccines to acute or subacute actively advancing cases, as in these, uninformed and routine treatment might do great harm.

The question of diagnosis was of importance, because, the disease usually called rheumatoid arthritis often proved difficult to treat when definitely established, but was as a rule easy if treatment was undertaken in its early stages. It was of extreme value, therefore, to be able to recognise the earliest signs and symptoms of the disease. These, it must be remembered, were often superimposed on those of long-standing osteoarthritis. The most significant sign was nuchal crepitus, in the absence of which *M. deformans* infection and therefore rheumatoid arthritis could definitely be excluded. General

symptoms often appeared very early. Paræsthesias (tingling and numbness) might be noticed. Weakness of muscles, especially of the forearms and lower limbs with consequent dropping of the metatarsal arch, were amongst the earliest obvious signs. Small joints were first attacked. A pathognomonic sign was a hypothenar flush. The speaker suggested that these various signs and symptoms might be called the rheumatoid stigmata.

Preventive Treatment.

The question was propounded as to whether it might not be possible to prevent arthritis and the severer forms of fibrositis which were the cause of so much industrial disability. Dr. Crowe believed that this was not only possible but was easy. The three essentials were early treatment by the general practitioner, clinics where the poorer classes could come and receive treatment for nominal fees, and lastly, an educative propaganda inculcating early treatment. In this last clinics themselves would play a very important part. But before these steps could be undertaken it was necessary that the general practitioner should acquire that facility in the treatment which alone would lead to success.

Dr. Warren Crowe's address was followed by a discussion.

MANCHESTER MEDICO-CHIRURGICAL AND OBSTETRIC SOCIETY.

AT a meeting held on Oct. 27th, with Mr. A. C. MAGIAN in the chair, Mr. R. R. KERR read a paper on

Abdominal Tuberculosis in Children.

Surgical tubercle in all its forms, he said, is known to be exceedingly common in Scotland. In the north of England it is by no means so obvious, but in Lancashire, where the climate is hardly ideal for the young of the human race (or for the middle-aged for that matter) it is rare not to find caseous glands in the mesentery in the course of the systematic examination carried out in a modern laparotomy. It is clear from this that tuberculous infections of the abdomen are not only very common, but also that in most instances complete recovery occurs without any symptoms having been noticed. In the great industrial community the way is probably prepared for the disease, not only by the damp and sunless climate, but by the weakening effects of rickets, infantile malnutrition, and absorption from septic teeth—conditions which have been tackled seriously and with a measure of success within the last generation. The problem of the mother who has to follow whole-time work in mill or factory is, of course, still to be solved.

In children, said Mr. Kerr, tuberculous infection usually reaches the bowel in milk or diseased meat. Here it may attack the lymphoid tissue and the Peyer's patches which lie in the lower end of the ileum, setting up localised ulcers, or it may be picked up by this lymphoid tissue and passed through to the mesenteric glands; this appears to be by far the commonest process. At other times it settles in or around the appendix, another lymphoid organ. From the ulcers in the intestines or the infected glands the process may spread to the peritoneum, setting up one of the forms of tuberculous peritonitis. The ulcers of the ileum may simply remain localised to the Peyer's patches in the mucous membrane of the bowel, tending to spread in a circular way around the gut and giving rise to diarrhœa, indefinite discomfort, and wasting. If they heal, the cicatrices tend to form ring strictures and may cause obstruction, but much more often the disease spreads through the bowel, setting up inflammatory fibroses around and matting and adhesion of adjacent coils—the condition known as hyperplastic tuberculosis, in which one or more definite masses can be felt through the abdominal wall. This condition has to be diagnosed from appendicitis and chronic appendix abscess, and it does not require much imagination or much experience in surgical work to know that the two are very frequently mistaken for each other. The tuberculous appendix may appear simply as an inflamed and thickened organ or its surface may show tubercles; but more commonly it is associated with tuberculosis of the cæcum, mesenteric glands, and neighbouring peritoneum, and the whole together may form a matted mass of infiltrated tissue, with small or large abscesses in the later stages. Tuberculous appendicitis often gives rise simply to a vague discomfort in the right iliac region, probably associated with malaise and wasting, and usually without the acute signs which characterise ordinary appendix inflammation.

When the disease affects the peritoneum, continued Mr. Kerr, this membrane becomes irritated and inflamed and exudes a varying quantity of clear rather yellowish fluid which later may become sero-purulent. The peritoneum itself often shows large numbers of small miliary tubercles and tends to become thickened and lose its normal lustre. As in all granulomata there is overgrowth of tissue; the mesentery becomes thickened, dull, and inflamed; its glands are enlarged and often caseous, and the intra-abdominal structures adhere to each other and to the abdominal wall sometimes in such a way as to obliterate the abdominal cavity. All degrees of these changes take place in different cases and the clinical appearances accordingly vary tremendously. For ease of description they are usually depicted in three groups—the ascitic, the fibrous, and the caseating or ulcerating; but these are not clinical entities, and one type merges into another, different symptoms predominating in different cases. In the ascitic form there is a large amount of fluid, usually pale yellow in colour; the abdomen is distended and the child is wasted. This form of the disease is always serious and often rapid in its course, the progressive wasting being accompanied by hectic fever, vomiting, constipation, and sometimes diarrhœa. In the fibrous form there is much matting of the intestines to one another and to the abdominal wall and little or no fluid. The omentum becomes drawn up and thickened (rolling of the omentum), sometimes forming a definite and easily palpable elongated tumour across the abdomen above the umbilicus. The patient in this type is usually not so ill as in the first, and there is a distinct tendency to recover. In the caseating type, in its advanced stages, the abdomen is simply filled with matted intestine and caseous granulomatous material in which small or large abscesses occur. These become secondarily infected from the bowel, ulcerate into the bowel or point through the abdominal wall, forming intractable sinuses and fæcal fistulæ, until the patient eventually dies of exhaustion, usually after a long and miserable illness.

The surgical treatment of this disease, said Mr. Kerr, is by no means entirely satisfactory, and depends largely upon each case being taken absolutely on its merits and also upon the experience and insight of the surgeon. Operation is inadvisable in the early stages where the disease is only suspected or where the diagnosis is reasonably certain by reason of continued malaise, slow or progressive wasting, possibly slight evening rise of temperature with indefinite abdominal discomfort, constipation, and occasional vomiting, combined with an abdomen slightly distended or giving the impression of irregular thickenings. The child should be treated on general lines with rest, open air, nourishing and easily digested food, and carefully graduated exposure to natural or artificial sunlight. Where there is definite ascites, however, it is always advisable to explore the abdomen, let the fluid escape, and deal with any obvious focus found. It is always wise in these cases to remove an inflamed or thickened appendix and to operate specifically for this if the diagnosis can be made. Pointing abscesses should be opened, warning being given of the danger of chronic sinuses and fistulæ resulting. For some curious reason a proportion of these patients do very well after operation, although nothing has been done beyond allowing the fluid to escape.

Where the fibrous changes predominate, said Mr. Kerr in conclusion, operation must usually be

absolutely inadvisable, but even here there are unlooked-for exceptions. About six years ago he was consulted about a youth who was in the advanced stage of this disease. He was wasted and cachectic, and his abdomen was full of irregular masses. He was advised strongly against any operation and sent to the seaside in good weather and conditions, but about two months later his condition had deteriorated and Mr. Kerr's hand was forced, rather against his judgment, by an attack of obstruction. On entering the abdomen with difficulty he found nothing but firmly matted bowel, everywhere adherent to the abdominal wall, and caseous masses of glands. The abdomen was closed and the parents told that the boy could hardly live for more than a few days. From that hour he proceeded to make a recovery which clinically appeared to be complete in about a year, and has remained so. Mr. Kerr found it difficult to draw any moral from this.

Following the reading of Mr. Kerr's paper there was a discussion, in which many members of the Society took part.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, ST. ANDREWS.

AT a meeting on Oct. 19th Sir HUMPHRY ROLLESTON read a paper on

High Blood Pressure from the Clinical Aspect.

He raised particularly the question whether or not a rise of blood pressure, per se, apart from causal toxic factors or the resulting arteriosclerosis, gave rise to symptoms of ill-health. It was not an uncommon experience, he said, to detect blood-pressure readings higher than the average in individuals who were entirely free from symptoms, and harm might result from too energetic measures adopted for lowering these pressures. Certain hypersensitive subjects, however, might conceivably manifest symptoms as the result of the heightened blood pressure alone. Libman had described a simple means of estimating individual's response to afferent stimuli, and ascribed angina *sine dolore* to the patient being hyposensitive. But to apply this explanation to high blood pressure would necessitate the assumption that in the early stages persons with high blood pressure were hyposensitive and became hypersensitive; possibly as high blood pressure was often due to protein derivatives, the hypertensive individual's nervous system might at some stage become sensitised by the protein bodies and so allow symptoms due solely to the high blood pressure to appear. On the other hand, F. M. Allen and others considered that high blood pressure was always due to underlying structural changes either of the kidney or of an arteriosclerotic nature. Bordley and Baker had shown by post-mortem findings that arteriolar sclerosis in the medulla oblongata was definitely associated with high blood pressure. But it was difficult to believe that such a change could underlie those cases in which a high pressure persisted for years with no advance and without interference with health.

Sir Humphry Rolleston also referred to the possibility of arterial spasm in this connexion, and spoke of work done by Draper on the constitutional make-up of subjects of high blood pressure. Finally, he considered seriatim the various symptoms commonly associated with high pressure cases in their early stages and questioned whether or not these occurred in the absence of definite chemical or structural changes. The tendency to hæmorrhage—nasal, intestinal, retinal, or cerebral—was probably dependent not on the pressure alone, but on vascular degeneration associated with it. Probably each common symptom considered could be explained by the presence of some factor other than the rise of pressure.

In the paper and the discussion which followed, the importance of the distinction between the rise of pressure itself and the associated degenerative changes was emphasised.

Reviews and Notices of Books.

A NINETEENTH CENTURY TEACHER.

John Henry Bridges, M.B., F.R.C.P. By his Niece, SUSAN LIVEING. With a Preface by Prof. L. T. HOBHOUSE, and an Introduction by Prof. PATRICK GEDDES. London: Kegan Paul, Trench, Trübner and Co., Ltd. 1926. Pp. 262. 10*s.* 6*d.*

John Henry Bridges was the son of the Rev. Charles Bridges, vicar of Old Newton in Suffolk, a man of views as uncompromisingly Calvinistic as those held by the naturalist, Philip Gosse, so brilliantly set out in "Father and Son." The atmosphere of the vicarage was repressive; in Miss Liveing's amusing words "the responsibility for their children's souls lay heavily on the parents, and one is left wondering how the roots of grace took hold at all, so sedulously were they pulled up to look for signs of growth." Luckily for John Henry Bridges, his uncle, the Rev. Charles Torlesse, vicar of Stoke, was of a different school, and when staying with the Torlesse family the boy's character had opportunities to open up. In 1845 Bridges went to Rugby under Tait, later Archbishop of Canterbury. Here he did well, and in 1851 proceeded to Wadham College, Oxford, with a scholarship. At Oxford he came particularly under the influence of Richard Congreve, a man of advanced opinion of the sort that would have filled Bridges's father with horror, and among his fellow undergraduates were two brilliant men, Edward Spencer Beesly and Frederic Harrison, both of whom counted in their friend's development. Congreve was a friend of Comte and a passionate advocate of his teachings. These three young men, together with George Earlam Thorley, who afterwards became Warden of Wadham, formed a small brotherhood which came to be the foundation of the Positivist Society in England. At this juncture fate dealt hardly with Bridges, he was expected by all to obtain a First Class in Greats, but by one of those turns of fortune, of which the Oxford class lists can show curious examples, he was placed in the Third Class, although one of the examiners said that he was "the ablest man in." This reverse shaped his future. He could no longer stay permanently in Oxford; he was intended for Holy Orders but felt that they were not for one with his religious opinions, and he turned to medicine, assuming, apparently, that a career of scholarship had been closed to him. One year remained during which he was a scholar of Wadham and he stayed in Oxford reading mathematics and science, and writing the Arnold Prize Essay entitled "The Jews in Europe During the Middle Ages," which gained him a Fellowship at Oriel College. But this success did not lead him to change his intentions of becoming a physician.

In 1856 he entered at St. George's Hospital, where he did brilliantly, taking the M.B. Oxford and the M.R.C.P. in 1859. In the following year he married his cousin, Susan Torlesse, and having previously determined to emigrate to Australia, they sailed in March, 1860, and on landing at Melbourne in June, Bridges started to practise. Then fortune dealt him another blow, for by the end of December Susan Bridges lay dead from typhoid fever and her striken husband returned to England bringing her body with him for burial at her father's church at Stoke. Keeping to the purely medical side of his life, Bridges now, and mainly for family reasons, determined to settle at Bradford and practise as a physician. He was elected almost immediately physician to the Bradford Infirmary and plunged into the industrial and sanitary problems of the day, which certainly were crying out for solution. They were briefly set out by Charles Kingsley at this date, in his lectures "The Roman and the Teuton," in which, speaking of the loss of life caused by the barbarian wars, he says "we have no right to blame those old Teutons, while we are killing every year more of Her Majesty's subjects by preventable disease

than ever they killed in their bloodiest battle." For seven or eight years Bridges laboured at sanitary difficulties and strove to combat the distress caused by the cotton famine of 1863 and the prevailing lack of decent housing. In 1869 he married as his second wife Mary Hadwen, whom he had known from a child, and in the same year he was offered the post of factory inspector for the North Riding. He held this post for a few months only, but this short time was enough to assure him of the evils of female labour in factories, and to win for his position as a sanitarian and reformer wider notice. Goschen asked him to act as locum tenens for one of the medical inspectors of the Poor-law Board, and when this officer's illness prevented his return the post was offered to, and accepted by, Bridges. Shortly afterwards Bridges became closely connected with THE LANCET. The scandals of Poor-law relief and the crying need for reform in the management of Poor-law infirmaries had been shown up in our pages in 1866 in uncompromising terms, and Bridges was in close touch with those who wrote the scathing reports. Large improvements were promised, and some were slowly carried out, it being through Bridges mainly that they materialised, for he never ceased by unceasing vigilance, by persuasion, by conciliation—if driven to it by stern insistence—to see that the reforms were carried out. For 22 years he laboured at a grand task of reconstruction, and when he resigned his post in November, 1892, he had lived to see as the fruit of his labours five fever hospitals in London and excellent Poor-law infirmaries, while the election of women guardians was established. It was a great record.

Bridges died in 1906 after occupying the last 14 years of his life partly in working for Positivism and partly in literary pursuits. His edition of the Opus Majus of Roger Bacon was undertaken at the request of the Clarendon Press, and he had every qualification for the work except one, and that an important one —namely, expert knowledge of palæography, giving ability to decipher manuscripts. During the progress of his edition a new MS. was discovered, of which he was left unaware, and as he failed to decipher correctly certain MSS. to which he had access, he was charged, on the appearance of the work, with being slipshod and unscholarly. He met the charge as a man of his honesty and passionate love of truth would. He had the new MS. photographed and transcribed by an expert palæographer, and brought out a new edition of his work with all necessary corrections. This was published in 1900, and was in every way worthy of the great Franciscan, but the errors entailed upon Bridges both labour and vexation, and he felt the shock to the end of his life.

We confine this notice to the medical and scientific aspects of Bridges's career, but he was equally well known as a preacher of Positivism, as an ardent leader against oppression in any form, as a burning critic of his country's political attitude on more than one occasion, and as a passionate advocate of the under dog in every form.

MODERN TREATMENT OF GENERAL PARALYSIS.

Der heutige Stand der Behandlung der progressiven Paralyse. By Dr. LADISLAUS BENEDEK, Professor in the University of Debreczen, Hungary. Berlin: S. Karger. 1926. With 25 illustrations. Pp. 219. M.12.

ALTHOUGH the title of this book indicates its concern with the treatment of general paralysis, we find chapters on ætiology, pathology, pathogenesis, on hyperergic reactions in the disease, taking up, perhaps, a quarter of its pages. The treatments examined are those by injections of immune serum, by infection (paraspecific therapy), and by direct (intralumbar and other) methods. In regard to the first of these, the following figures are given: of 63 patients thus treated, 6 improved, 15 became worse, 19 remained unchanged, and 23 died. Under the second category are discussed the techniques and results of tuberculin, vaccines, sodium nucleinate, phlogetan, injections of milk, and malaria. To the last of these considerable attention is given; the use of the spirillum of recurrent fever is also examined. The problems associated with the manner of action of paraspecific therapy receive consideration. Finally, the numerous modifications of salvarsan therapy are investigated. After each chapter excellent bibliographical references are furnished. The treatment of general paralysis is in a state of flux; this useful volume discusses not only modern therapeutic methods but also those now almost obsolete and of little more than historical interest. On the other hand, it is equally possible that the vogue of the malaria method will fade when a true specific therapy is attained. For the moment it seemingly holds the field, although the use of tryparsamide is also receiving support.

NERVOUS ANATOMY.

Les Noyaux Gris Centraux et la Région Mésencéphalo-sousoptique. By Ch. FOIX and J. NICOLESCO. Paris: Masson et Cie. 1926. Pp. 582. Fr.125.

WE have nothing but praise for this fine contribution to nervous anatomy, which is, indeed, worthy to take its place as a supplement to Dejerine's famous "Anatomie des Centres Nerveux." Superbly illustrated, it fills a definite lacuna in the literature, for the ever increasing study of the pathological and clinical aspects of the basal ganglia renders exact knowledge of their anatomy indispensable.

A description of the general anatomy of the basal ganglia and the regio subthalamica is followed by a minute study of serial sections, cut in various directions, and this in turn by a synthetic consideration of each organ separately and its connexions. There is an appendix on the pathological anatomy of Parkinson's disease.

The volume does the greatest credit to its authors, the printers, and publishers; it represents French neuro-anatomy at its highest level of lucidity and erudition.

THE DISPENSATORY OF THE UNITED STATES OF AMERICA.

Twenty-first edition. Edited by HORATIO C. WOOD, jun., M.D., and CHARLES H. LAWALL, Ph.M., D.Sc., Phar.D., with the assistance of H. W. YOUNGKEN, J. F. ANDERSON, and IVOR GRIFFITH. London: J. B. Lippincott Company. 1926. Pp. 1792. 65*s*.

THE general form and mode of presentation of this immense work of reference are the same as in the previous 20 editions, but the pharmaceutical progress of the last eight years has involved a large amount of revision and rewriting. The new U.S. Pharmacopœia has officially recognised 33 new drugs, and many other new remedial agents have been introduced. The International Formulary being now a legal standard in most parts of America, the drugs contained in it have been transferred to the official section of the dispensatory. Careful pruning and condensation have avoided any increase in the size of a book already, as the editors admit, somewhat unwieldy in a single volume. Translations of metric into apothecaries' measure and of Centigrade temperature into Fahrenheit have accordingly been dropped in the hope that they will no longer be found necessary by a large proportion of readers, but the double system is continued in the case of doses, for it appears that practically all prescriptions in America are written in apothecaries' measure. Copious bibliographical references are designed to unlock the door of the past to those who wish to trace the history and development of some phase of pharmacy. The text is given of the Food and Drugs Act and of the Harrison Narcotic Act, and then follow in alphabetical order the descriptions of official drugs, some account being included in each case of the commercial history and varieties, physical properties, constituents, impurities, adulterations, and

uses. This book is the standard work of reference for pharmacists in the United States and will prove a mine of information to their colleagues and all who are interested in drugs and drug preparing in other countries.

SEX IN MAN AND ANIMALS.

By JOHN R. BAKER. London: Routledge and Sons. 1926. With 22 figures. Pp. 175. 7*s.* 6*d.*

PEOPLE nowadays think and talk so much more frankly and openly about sex than they used to that it is well, as Prof. Julian Huxley says in his preface, that they should have some accurate knowledge of the fundamental facts. In this book Mr. Baker has given a plain and very clear account of the mechanism and significance of sexual reproduction, adapted, as he hopes, for biological and medical students as well as for the general public. In successive chapters he exposes the advantage of sexual propagation, sexual selection, sex chromosomes and hormones, abnormalities of sex, the sex ratio, the control of sex, and sex behaviour. The accuracy of his facts is vouched for by Prof. E. S. Goodrich and Prof. J. Huxley, and in a small space he tells an interesting tale in a way which will probably be intelligible to a serious reader without any technical training. Rather unfortunately, we think, Mr. Baker has not been able to resist the temptation to point what he takes to be the morals of it all and, especially in its later parts, the book wanders over the widest fields of speculative psychology and dogmatic sociology where his statements are naturally of a different order of validity from those which describe the results of experimental biology. In what he says, for instance, about over-population, contraception, and agricultural life in the Dominions (p. 168) he does not seem to realise that there is no evidence of a serious kind that children of small families grow up into better citizens than children of large families; that such is the case seems a natural a priori assumption, but it is no more than that. However, where Mr. Baker is weakest his readers will be strongest and will form their own opinions. These will be more likely to be correct if his cytology and physiology have been properly apprehended.

JOURNALS.

BRITISH JOURNAL OF OPHTHALMOLOGY.—To the August issue Prof. O. Berner (Oslo) contributes a highly technical paper entitled "Studies in the Peripheral Relations of the Musculus Dilatator Pupillæ." The existence of this muscle, long doubted, is now established, but its attachments have never hitherto been defined. The paper should be read in relation to the different theories which are held of the functions of the circular fibres of the ciliary muscle.—C. A. Clapp (Johns Hopkins Medical School) gives drawings of new-formed vessels in the vitreous of a syphilitic patient.——In the September issue R. C. Davenport reports on the cases of glioma retinæ treated at Moorfields during the years 1915–24. There were 27 treated during this period. In 17 of them the end-results and histories were sufficiently certain to give figures. The known cures—i.e., survivals for three years without recurrence—were 7, but in one case recurrence in the second eye took place about 14 years after excision of the first eye. Progress was then so slow that it was four years before the second eye was excised in 1918. It is remarkable that in this case the patient made a good recovery and is still alive. Another report on the after-results of corneo-scleral trephining for glaucoma by the same author is even more interesting. The paper analyses the results in the case of 405 eyes trephined for primary glaucoma. Of these 80 per cent. were apparent successes and only 4·5 per cent. complete failures. The point which remains most in doubt as to this operation is that of late infection. In all 14 cases of "late" infection were treated at Moorfields during the years 1919–24, and in eight of these it was clearly an infection via the trephine hole. The majority of the cases occurred a few months after operation—one as late as seven years after. In only two cases was the infection so severe as to call for evisceration. Mr. Davenport opines that late infection, while a serious if not very frequent misfortune, is hardly the bogy it is often made out to be by some who even call for the total abandonment of the trephine operation.—— The October issue is occupied by a long communication from W. S. Duke-Elder on the ocular circulation, its normal pressure relationships and their physiological significance. Incidentally, he has some hard words to say of any form of tonometer as an instrument of precision. Its only use, he says, is confined to the comparison of the two eyes of the same individual at the same time, or of the same eye at different times. This, however, is precisely the way in which the instrument is generally employed. For this reason he condemns P. Baillart's method of measuring the intra-ocular arterial and venous pressure and has devised a method of his own which he describes. Experiments were carried out in the Department of Physiology and Biochemistry in University College, London. It is demonstrated that the pressure in the retinal arteries is about 75 mm. Hg in the cat, that the pressure in the intra-ocular veins is in all circumstances greater than the intra-ocular pressure, but, under conditions of raised intra-ocular pressure, the pressure in the venous exits may fall below the chamber pressure. The capillary pressure is very variable and has no direct relation to that of the arteries. The relation of the vascular to the intra-ocular pressures is compatible with the theory of the formation of the aqueous by a process of dialysis from the blood, so that the hypothesis of a secretory apparatus in the ciliary body is unnecessary. The circulatory conditions lead to the expectation that the dialysation of the intra-ocular fluids would occur *from* the blood stream mainly, but not entirely, through the vessels of the ciliary body and iris, and *to* the blood stream mainly, but not entirely, through the canal of Schlemm. Incidentally, the assertion of Thomson Henderson that the circulus arteriosus major of the iris is really venous is combated. The article, to which is appended a copious bibliography, is an important contribution to the physiology of the eye.

THE RASSEGNA INTERNAZIONALE DI CLINICA E TERAPIA (Naples) for August, 1926, contains an interesting original contribution by Prof. V. Tramontano and Dr. F. Pansini on Multiple Neurofibromatosis, a syndrome described by Recklinghausen in 1883 and generally associated with his name. After a résumé of the work done by other observers the authors describe a typical case under their care with coloured illustrations of the microscopical appearances, which show that the new tissues are composed of elements with large clear round or oval nuclei, and arranged in parallel bundles which sometimes assume a spiral form. Changes in the endocrine glands were not found. These observations point to the conclusion that Recklinghausen's disease is due to embryogenetic changes in the tissues which, stimulated by various causes, most frequently toxic, proliferate and determine the morbid process.—Dr. R. Calvanico in another article describes the histological changes in transplanted ovaries in animals. Although the follicular elements completely disappeared after an interval of 40 days, the interstitial elements did not become sclerotic, but contained many cellular elements which suggested a permanence in specific capacity. In proof of this he describes a case in which a healthy ovary was transplanted from one woman into another, who at the age of 25 years suffered from primary amenorrhœa and remained sterile after five years of marriage. The operation was so far successful in that a metrorrhagia occurred at monthly intervals accompanied by turgescence of the breasts and lacteal secretion.—Prof. L. Castaldi contributes a synthetic review on the problem of determination of sex.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 13, 1926.

EPILEPSY AS A DEFENCE.

MEDICAL and legal views of criminal insanity are notoriously unreconciled. The doctors feel that the law courts err in adhering to obsolete tests of mental disease; they know that, long before actual delusions or open signs of insanity manifest themselves, there may be symptoms of a morbid condition affecting the patient's mental activities, and that the early symptoms and the final delusions, mania, melancholia or dementia are merely different stages in one disease. On the other hand, the lawyers answer, in terms which find expression in the Atkin Committee's report: "We do not profess to define disease of the mind, but only to define the degree of mental disease which shall be allowed to negative criminality; this is as much a question of law as the question at what age a child is to be deemed criminally responsible." This difference between the medical and the legal outlook is frequently illustrated, and especially in murder trials, where, since a conviction for murder entails the death penalty, every possible point must be taken for the defence.

A fresh example occurred at the Herefordshire assizes last week upon the indictment of CHARLES HOUGHTON for the murder of two ladies named WOODHOUSE by whom he was employed as butler at Burghill Court, near Hereford. The prosecution alleged that HOUGHTON, a man of 45, had been in the service of the WOODHOUSE family for 22 years and was given notice of dismissal last September because he had taken to drink; next day, after attending family prayers and serving the family breakfast, he shot them and was presently found in his bedroom with his throat cut. A suggestion of epilepsy was made during the cross-examination of Dr. VINCENT SHAW, who was a witness for the prosecution, but Dr. SHAW declared that the accused seemed to be perfectly normal. For the defence the prisoner's sister stated that between the ages of 7 and 11 HOUGHTON had fits which caused him to foam at the mouth. Dr. CYRIL FRANCIS, another witness for the defence, said he had examined HOUGHTON the previous day, when the prisoner seemed not quite normal; the symptoms he found pointed to epilepsy. Dr. FRANCIS expressed the belief that there might be a possibility that HOUGHTON had lost his mental control. During the giving of this evidence Mr. Justice RIGBY SWIFT is reported to have twice interposed the question, "Are you prepared to swear that in your opinion he was in fact so insane as not to know what he was doing?" Dr. FRANCIS was unable to put the prisoner's case so high, and Dr. JAMES BELL, medical officer at Gloucester prison, stated on the other side that in his opinion HOUGHTON had shown no signs of insanity, mental disease, or epilepsy, nor did he think that HOUGHTON had had an epileptic fit on the day of the shooting. HOUGHTON was found guilty on the first indictment of murdering one of the two ladies; he was sentenced to death, and the further indictment in respect of the second alleged murder was not proceeded with.

It may be recalled that one of the Atkin Committee's recommendations was that provision be made under departmental regulations for examination of an accused person by an expert medical adviser at the request of the prosecution, the defence, or the committing magistrate. Has this been done, or is the matter left in abeyance like the other recommendations made by the Committee?

NARCOLEPSY.

"The disease I am about to describe is characterised by the occurrence of attacks of irresistible sleep without apparent cause, and curious attacks on emotion in which the muscles relax suddenly so that the victim sinks to the ground, fully conscious, but unable to move."

THIS almost dramatic sentence forms the opening paragraph of a paper on Narcolepsy by Dr. W. J. ADIE in the October issue of *Brain*. In it the whole description of the malady is crystallised, for Dr. ADIE rightly contends that the term "narcolepsy" is best confined to the condition—with peculiar and unmistakable features—of which his article treats. His description of the characters of the disease is based upon eight cases from his own observation, supplemented by some 15 published reports, and it will undoubtedly establish the condition as a clinical entity with this label. Narcolepsy, as thus defined, is more common in the male sex; it usually begins between the ages of 11 and 35 and persists unabated throughout life. REDLICH first drew attention to signs of ductless gland disorder in some of the cases—a small pituitary fossa, slight acromegalic signs, obesity, delayed sexual development, or periods of amenorrhœa being occasionally observed. Otherwise the patients are to examination physically and mentally normal. In most cases two kinds of attacks occur: either the patient is overcome by sleep, or, usually as a result of some emotional disturbance, the muscles become flaccid and powerless. These Dr. ADIE names "sleep attacks" and "cataplexy" respectively. The former nearly always appear first and may precede the latter by a year or more. The attacks vary greatly in frequency, but usually occur daily, and each may last from a few seconds to 15 minutes or even more. There is a certain constancy in those of each individual. They may occur not merely when conditions are conducive to sleep but when they are the very reverse—in the midst of an interesting conversation, while cycling or riding, during bombardments and even on listening-post duty. Many patients know when an attack is coming on, but, though they may delay it, they cannot prevent the onset of sleep; on the other hand, any slight stimulus from without may dispel the sleepiness at once and completely. The sleep of the attack is in every way similar to natural sleep. The cataplectic attacks are brought on by emotion, usually by laughter; "when I laugh I fall down." In these seizures, as a rule, the patient merely feels limp, falls flaccid, and regains control of himself after a few seconds, but occasionally the cataplectic attack may end in sleep. Naturally enough, many such attacks are mistaken for petit mal, and some are even diagnosed as chorea. Dr. ADIE takes some pains to show that the two kinds of attack are essentially the same, the cataplectic attack corresponding to the aura of the sleep attack and being in fact merely a slighter form of it. The feeling of powerlessness is merely an exaggeration of that helplessness or inability for action which may overcome normal people or animals under strong emotion—e.g., with laughter, or during fear or horror. "But our patients," he says, "so far overstep the arbitrary limits of the normal that we are justified in saying that they suffer from disease."

The diagnosis has to be made from epilepsy, pyknolepsy, and hysteria, and from certain conditions such as pituitary or other cerebral tumour in which excessive somnolence may prevail. From epilepsy the main diagnostic difference is that cataplectic attacks are brought on immediately by a recognisable exciting cause—namely, emotion—whereas attacks of epilepsy come on without apparent cause; in ruling out hysteria reliance may be placed on the absence of undoubted hysterical manifestations and the failure of every kind of suggestion to banish the attacks.

Dr. ADIE is most interesting, however, when he discusses the theoretical considerations to which this disease gives rise, and co-relates the phenomena of narcolepsy with those observed in animals by PAVLOV during his study of sleep. The matter is closely bound up with the study of the so-called conditioned reflexes. We can distinguish between reflex activities with nervous connexions present at birth, and associated reflexes which appear during life; if indifferent stimuli frequently accompany a stimulus which evokes an inborn reflex, these stimuli by themselves soon begin to evoke the same inborn reflex by "association." PAVLOV calls the inborn reflexes "unconditioned" and the acquired reflexes "conditioned." Conditioned reflexes may be inhibited or delayed (internal inhibition). From the beginning of his researches on conditioned reflexes PAVLOV was greatly hindered by somnolence and sleep which overcame his animals during the experiments. For example, it would happen that after a good conditioned reflex had been established, the animal became somnolent or fell asleep during the time that the conditional stimulus was active. In one instance food followed the stimulus in ten seconds and the reflex secretory and motor responses of the animal during those ten seconds were very active. But when food was withheld for 60 seconds the dog became sleepy during the waiting period, the conditioned response disappeared (was inhibited), and the dog that had never slept in the experimental stall before fell asleep every time the stimulus was repeated. From variations of many such experiments PAVLOV reached the conclusion that sleep and internal inhibition of reflexes were essentially the same process—inhibition being a partial and strictly localised sleep confined to a small area of the cortex—while sleep was inhibition which had spread throughout the cerebral hemispheres and to subcortical centres. If we wish to limit inhibition and prevent it passing into sleep we must produce new points of excitation in the cortex by using stimuli of a different kind.

In the attacks of narcolepsy every gradation is seen between slight and local cataplexy and profound and prolonged sleep. If, as appears likely, the former is a result of inhibition of cortical processes, then the sleep in the other cases must also be due to inhibition. PAVLOV'S conclusions thus receive support from the phenomena of narcolepsy. On the other hand, some features of narcolepsy become intelligible in the light of his experimental findings. Apparently, attacks in narcolepsy are favoured by a lack of extraneous stimuli and, secondly, by monotonous stimuli. In PAVLOV'S dogs repeated stimuli, even though painful, produced sleep with certainty if no dissimilar extraneous stimuli reached the animals. The receptive point on the cortex apparently became fatigued; it slept, and the inhibition spread to produce general sleep. The same seems to occur in the narcoleptic patient. Again, it was difficult to understand at first why patients were unable to resist sleep and yet could almost always be wakened with extreme ease. PAVLOV'S results supply the explanation: the inhibition was dispelled at once and completely by a fresh excitation of another kind. Dr. ADIE submits that all the attacks in narcolepsy are due to inhibition, whether they take the form of "tone loss attacks on emotion" or of frank sleep. The explanation is ingenious and satisfying and in accordance with experimental work. The indications are that such a physiological disturbance arises from a disorder of the pituitary or of structures in the 'tween brain which are associated with it.

BIRTH CONTROL INSTRUCTION BY PUBLIC AUTHORITIES.

IN the last annual report of the county borough of Croydon Dr. H. P. NEWSHOLME comments upon the desirability of giving official permission to public authorities to instruct poor people in artificial birth control. Two arguments stressed by Dr. NEWSHOLME deserve consideration. (1) He considers that children of large poor families, born at close intervals, gain, from contact with other children of their own age, more than they lose from the physical privations to which they are exposed by the extra financial responsibilities of their parents. (2) Any method of birth control other than that of self-restraint cannot be generally encouraged on account of the "irreparable harm" which the use of contraceptives might cause by "changing the attitude of husband and wife to one another." "I feel," says Dr. NEWSHOLME, "that this, though a difficult matter to define, is a fundamentally important question, and that the basic danger to national life arising from the adoption of mechanical means of birth control on anything like a national scale depends not so much on the risk of a stationary population as on that of a materialistic bias in the national attitude towards sex and marriage." Dr. NEWSHOLME concludes his review with a cautious advocacy of a medically supervised extension of knowledge of artificial birth control to the poor. But he makes two conditions for this proposed official extension. The first is that the selection of medical officers be very carefully made. The responsibilities to be undertaken are so onerous, and their incompetent discharge so fraught with disaster for the community, that only medical men of established discernment and judgment are held to be fit for it. The second condition is that advice be given only when the medical officer has personal knowledge of the home circumstances of both parents, and when he has discussed with them the possibility of applying methods of self-restraint. Dr. NEWSHOLME would have this advice given at the antenatal centres rather than at the child welfare centres.

With Dr. NEWSHOLME'S practical conclusion few unprejudiced medical men to-day would quarrel. A motion embodying the same general conclusions was carried by a majority of votes early this year in so conservative a body as the House of Lords. But the considerations advanced above, which make his conclusion so tentative and conditional, hardly possess universal applicability. His argument that the children of small families suffer from deprivation of healthy contact with children of their own age, while probably being true of Croydon—a relatively well-to-do neighbourhood—does not hold of poorer quarters of London. In these, the playground for the children, in almost all weathers, is the street. Here the child, whether he be an only child or a

member of a large family, is thrown into a more than sufficient contact with children of all ages. The houses and flats of the people for whom the new legislation is suggested are so small, and for the most part so crowded together, that even if each family were restricted to one or two children, these would make, in the streets and the enclosures of the tenement houses, as much healthy contact with children of approximately their own age as the sturdiest educationist could require. But Dr. NEWSHOLME'S argument undoubtedly has weight when applied to the middle classes. The only child of the city worker, living in a semi-detached villa in the suburbs, or even of the wealthier parent residing in a more fashionable part of London, in more cases than not does suffer from the deprivation described by Dr. NEWSHOLME. But it is not primarily for the mothers of these that the medical officer of the antenatal centre would provide the suggested information. The second argument, that the use of contraceptives leads to a loss of mutual esteem between parents, is one which emanates more frequently from the mouths and pens of clergymen than from doctors. Anyone acquainted with the street corners of slums on Saturday nights or on Bank Holidays can picture to himself the scenes that are destined to be enacted between husband and wife when the public-houses are emptied and the homes are filled. If we are concerned with the mutual respect between the slum-dwelling husband and his wife let us discuss it in this connexion after the drink question has first been solved.

There is another aspect of this problem which has been omitted from consideration by Dr. NEWSHOLME, though it has considerable medical importance. The sale of contraceptives which are bought and fitted without any kind of medical advice or supervision has been conducted among the middle classes for a considerable time past. It is beyond discussion that the promiscuous buying and unsupervised adjusting of pessaries has been responsible for not a little genital disease, and probably also of sterility. Insufficient distinction has been made by medical men between the harm caused by contraceptives thus promiscuously acquired, and that following from their use after the cervix has been inspected and a pessary of suitable size, quality, and shape has been fitted by a competent doctor. It is to be presumed that these measures would become the routine of the medical officers as they now are at the clinics where information on artificial birth control can be obtained. The indifference evinced until recently in this matter by the medical profession has led to an extensive sale of contraceptives which are inefficient, injurious, and in many cases outrageously expensive. Hitherto the sale has been made chiefly to the middle classes. To-day there are signs that it is being extended to the working classes, where already the practice of abortion in its crudest forms is prevalent enough. There are at present several firms—and not all of them British—bent on selling contraceptives to the English public. Seeing that there is nothing whatever to prevent a woman, whatever her status, from buying these contraceptives, and nothing to hinder her from misapplying and misusing them, it would seem desirable on purely medical grounds that facilities be made available for consultation and supervision, though whether these should be linked up with welfare clinics is not necessary.

Upon the question of birth control many highly controversial statements have been made. In the present circumstances, however, it seems possible to frame two that will command fairly general assent. In the first place, it may be said that birth control, whether by means of contraceptives or by self-restraint, is being practised relatively too much by the upper, middle, and artisan classes, while it is being practised relatively too little by the unskilled labouring classes. Secondly, it may be stated that if birth control is to be practised at all—and many inducements to its adoption, commercial and otherwise, are being brought to bear on all classes—it should be practised under proper medical supervision.

Annotations.

"Ne quid nimis."

THE BEIT MEMORIAL FELLOWS.

FIRST among the problems of post-graduate medical education is the kind of training most suitable for those intended to fill the posts of teachers in medical schools. The experience needed by men who intend to devote themselves exclusively to research on the one hand or to the healing of the sick in their own homes on the other, is easier to arrange. Those acquiring new knowledge, and those anxious to apply that already gained are at opposite ends of the medical pole and there is no special advantage in burdening either class with too intimate a knowledge of the perplexities of the other. Indeed, some hold that the business of research should not be hampered by any sense of the need to achieve immediate practical results, while the dogmatic optimism of the practitioner is often a better tonic when untempered by perception of the futility of arguing from uncontrolled results. Teachers, however, must have an appreciation, if not actual experience, of all branches of medicine, if they are going to help each student to select the activities most suited to his talents. The formation of clinical units in our medical schools was an expression of the desire to secure as teachers of medicine and surgery men who have clinical experience and at the same time have not only been trained in research, but are still active in the pursuit of what is to them the most fascinating of recreations. It is more than a coincidence that the endowment of research fellowships by the Rockefeller and Beit trustees has occurred at the same period as the purely clinical training for hospital teachers has been found wanting. It is essential, if we wish to get full value from such generous endowments, to make known the careers open to those selected to hold these research fellowships. Their after-history is at least as important to medical progress in its widest sense as that of the sufferers from the diseases they are subsidised to investigate, and, happily, not so difficult to ascertain. A valuable pamphlet, just issued by the trustees of the Beit Memorial Fellowships for Medical Research (35, Clarges-street, London, W. 1), gives information not only as to the conditions of value and tenure of the fellowships, the places where research is authorised, and the times and methods of application, for the information of candidates, but also a list of the 108 fellows elected since 1910, with the nature of their authorised research and notes on their after careers. Of the total number 6 are dead and 31 are still holding fellowships, or have completed them only in 1926, so that the fate of some 70 fellows remains to be analysed. Of these 12 (F. Ransom, S. Russ, E. Mellanby, T. R. Elliott, J. A. Gunn, C. H. O'Donoghue, J. McIntosh, A. B. Macallum, E. C. Grey, V. H. Moorhouse, G. E. Nicholls, E. B. Verney) have been elected to fill university chairs in such diverse subjects as pharmacology, physics, medicine, zoology, pathology, biochemistry, chemistry, and physiology; 4 (H. Priestley, D. T. Harris, W. G. Penfield, and H. Goldblatt) are associate or assistant professors respectively of physiology (2), surgery, and pathology, and 13 hold lectureships. Fourteen are attached to the honorary staff of hospitals, and of the remainder the majority hold permanent posts in research institutions, mostly with a substantial list of publications to their credit. The success achieved by so many of the Beit fellows should be an encouragement to those hesitating whether or not to apply for the Fellowship in Tropical Diseases now vacant. Formerly the man who chose after qualification to take a research fellowship instead of a routine clinical or teaching appointment used to take a certain risk, since promotion mostly followed the direct line of demonstrator, lecturer, reader and professor on the academic side, whereas the path to clinical promotion was that of

house physician or surgeon and registrar, followed by a long period of more or less continual presence in the hospital as clinical assistant until a vacancy should arise on the honorary staff. It is this intermediate period of "hanging round hospital"—prohibitive to those without private means—that can now usefully be filled by tenure of a research fellowship. The varied record of achievement of the Beit fellows is a sign that whatever the aspirations of a newly-qualified man or woman, the tenure of such a fellowship is likely to advance them.

LIVE AND DEAD VACCINES.

THE stricter sect of the pharmacologists are apt to say that there are about half a dozen drugs which really have some action which is worth considering, and that a good deal of the rest of the pharmacopœia might well go the way of sarsaparilla. What they mean is that only a few drugs have a definite curative action which is so obvious that it cannot be missed by the superficial observation of a few cases. It is one of the great problems of therapeutics to decide for certain whether the effects of "tonics" and "alteratives" and such like really justify the vast quantities of them which are prescribed and drunk. In their favour is the mass experience of practising medical men; against them is the fact that their use is empirical, and their actions, if any, inexplicable. The pharmacological use of bacterial bodies and of substances derived from them came in under the influence of one of the greatest of modern biological discoveries—the immunological species-specificity of proteids—and it was natural that in the earlier trials this specificity should have controlled the choice of the remedial agent; to try to protect against typhoid fever by injecting dead anthrax bacilli would have been an attempt of almost inconceivable originality. But as Prof. J. McIntosh points out in his presidential address to the Pathological Section of the Royal Society of Medicine, which we printed on Oct. 30th, there has slowly grown up a body of varied observations which show that the injection of any foreign proteid may rouse the body to a response which may be favourable against any infection, and, indeed, against some morbid conditions which are not clearly known to have an infective origin. It is not known why ulcers of the leg should be improved and cured by the injection of the bacteria which find their way into distilled water or by an intravenous dose of boiled milk or by an extra large quantity of any bacterial vaccine. The practice is at present frankly empirical. Prof. McIntosh suggests that these non-specific injections throw the body into a state analogous to the fever due to infection and help the general resistance as a poultice helps local resistance. It may well be so, though much more demonstrative evidence is needed before this explanation can be regarded as wholly satisfactory. Whatever its rationale, however, the method is clearly of some therapeutic value, in some cases, notably general paralysis, of a high order. It is, indeed, an "alterative," as anyone who has experienced protein shock therapy will readily agree. If it were better understood it would be easier to use it more efficiently, and it is of good augury that it should be favourably considered from a point of view where specificity generally reigns supreme.

Prof. McIntosh puts forward other conclusions which are also open to some differences of opinion. He regards the use of living vaccines as a retrograde step, which should be rigorously opposed, having in mind the recent discovery of vaccinial encephalitis, and looking with suspicion on Calmette's advocacy of a live vaccine of attenuated tubercle bacilli. It is possible that a dead vaccine virus may be as efficacious against small-pox as killed rabies virus seems to be, and it is most desirable that every effort should be made to find out whether this is so. But it can hardly be denied that all attempts to protect against tuberculosis with dead tubercle bacilli have failed, and in the face of the importance of the problem it seems a little academic to condemn a method which holds out at least some slight chance of success on theoretical considerations of our ignorance of what might happen. The success, too, with dead vaccines in plague and pneumonia is scarcely as great as one would like; the pneumococcus, indeed, has resisted bacteriology and hygiene with most disappointing success. A return to live vaccines would certainly be a return to an earlier practice; it does not necessarily follow that it would be ineffective or dangerous.

THE INCIDENCE OF CANCER IN AMERICA.

IN a recent issue of the *Bulletin* of the Office International d'Hygiène Publique Dr. W. W. King, of the U.S. Public Health Service, discusses the incidence of malignant disease in the United States of America. It is only since 1900 that complete statistics have been available, but even within the comparatively short period of a quarter of a century cancer has passed from the ninth to the fourth place among the principal causes of death. In 1900 deaths from malignant new growths formed 3·6 per cent. of the total mortality, whereas in 1924 the percentage had nearly doubled, reaching 7·75. An exhaustive inquiry was set on foot some years ago by the U.S. Public Health Department in order to ascertain how far the apparently increased incidence of cancer was real. An analysis of the tables brings out a number of interesting points. Thus, in investigating the cancer mortality-rate in various age-groups, it was found that the increased percentage-rate occurred from the age of 20 to 29 years and upwards, but was most marked from 70 years of age. It is pointed out, however, that, as in other countries, there has been a marked decline in the number of certificates in which the cause of death is "unknown" or ascribed to senility, the greater accuracy of modern diagnosis also being reflected in the drop in the number of deaths ascribed to benign tumours. These and other factors probably account for about 30 per cent. of the increased cancer mortality-rate, the remaining 70 per cent. representing the true increase. With regard to the site of malignant tumours, there is a markedly greater increase in the incidence of cancer affecting certain of the more accessible organs, such as the tongue, breast, or uterus, than in that of less accessible sites, such as stomach or liver, the increase ranging from 65 per cent. in cases of cancer of the female genital organs and 103 per cent. in cancer of the oral cavity, to 51 per cent. in cancer of stomach or liver. The greatest increase of all, however, was found in cancer of the peritoneum, intestine, and rectum, which amounted to 148 per cent. in the 20 years under review. As far as cancer of the breast is concerned, it is the age-group 30–39 years which shows the greatest increase in the death-rate. On the other hand, in cancer of the stomach and liver, which accounts for 36 per cent. of all cancer deaths in the United States, the greatest increase appeared in the age-groups above 40 years. Analysis of the statistics furnished by 34 of the United States and by a large number of towns with more than 100,000 inhabitants shows that, generally speaking, the Northern States have a higher percentage of deaths from cancer than the Southern States. Negro and white races appear to be equally susceptible.

ANGINA PECTORIS.

Angina pectoris was known to Hippocrates and Erasistratus, but Heberden was the first of later physicians to describe it, using in 1768 the name it still bears. Parry first suggested calcification of the coronary artery as a cause, but did not follow up his hypothesis with anatomical proof. Jurine, in 1815, suggested as the cause a neuralgia of the pneumogastric and phrenic nerves, and Latham, in 1846, put forward a theory that it was due to cramp of the heart-muscle. Bernard was the first to produce an attack artificially by nicotine, and later work

has shown that this poison acts on the coronary artery as well as on the splanchnic and peripheral vessels. On the whole, the coronary theory is the one supported by the greatest weight of authority, though the discussion reported on p. 1010 shows that it is not universally accepted. Dr. Hans Kohn has expounded it with a formidable mass of evidence in the monograph[1] which he has just published as part of the vast Brugsch symposium. His conclusions are that angina pectoris is invariably due to stenosis of the coronary artery, and that this is nearly always a result of atheroma, syphilitic infection or endarteritis obliterans. Thrombosis occurs in some cases, but embolism and anatomical anomalies complicate only a very few. Nevertheless, he considers, in a certain percentage of patients the cause is functional; nervous instability and the action of toxins produce angina even if the coronary artery is sound. Very rarely the excitant is a purely anatomical lesion of the extracardiac nerves. He deduces from these data that angina is a disease entity and not a group of symptoms, that there is only one angina, and that "there is no pseudo-angina, but only pseudo-diagnosis." The pain, and its by-product the oppression, arise in the coronary artery and in the ischæmic heart-muscle, The question of whether the ischæmia itself is due to acid deficiency, to excess of the waste products of metabolism, or to physical alterations, and whether the pain thus produced is actually due to cramp of the heart-muscle, Dr. Kohn finds himself bound to leave to other investigators. He explains the sense of annihilation as possibly a product of the disturbance in the autonomic nervous system, a branch of which innervates the coronary artery, but thinks it more likely to be an expression of a momentary stoppage of the heart resulting from ischæmia of its muscle. Everyone is familiar with the distress that accompanies the slightest spasm of the heart, and considering the importance of this organ, it is not surprising that any distress here should reflect itself emotionally as a feeling of imminent death. Death in an attack is a result of the local anæmia. Attempts to alleviate the attack itself must always be directed against the spasm, and in certain cases against secondary failure, and this fact supports the coronary hypothesis. Dr. Kohn's treatise should not be neglected, for although he holds decided opinions he has selected his authorities with scientific impartiality, and, needless to say, with Teutonic thoroughness.

WHAT IS ALLERGY?

ALLERGY, according to the definition of Pirquet, the originator of the term, is the changed power of reaction which the body acquires as the result of infection by a parasite or injection of a foreign substance. Obviously this definition is a very wide one. On the one hand, it will include not only infection by parasites which multiply after entrance into the body but also injection or ingestion of chemical substances which do not increase in amount, but rather break down in the tissues into simpler substances; on the other hand, logically at any rate, the definition will include increased power of resistance as well as diminished resistance or hypersusceptibility, though it is in the latter sense that the term is practically always used. Thus the term allergy tends to become broader as time goes on, and is nowadays so much confused with the term anaphylaxis that it is difficult to know where to draw the line. It would seem to be safest to confine the term anaphylaxis to the definitely specific reaction in relation to protein injection for which the word was originally coined by Richet. How much depends on definition may be gathered from a study of a recent book[2] by Prof. Hugo Kämmerer, of Munich, wherein the author discusses allergy in all its modern significance and in its relation to anaphylaxis. These developments carry us far afield and have a bearing on allergic disposition (constitution), diathesis, predisposition, idiosyncrasy, heredity, and numerous other terms which have hitherto belonged to the vague hinterland of clinical medicine without possessing a clearly defined significance. Allergy will not explain all the questions wrapped up in these clinical phrases, but it is all to the good that an attempt should be made to define their boundaries. This discussion naturally leads the writer to a consideration of various diseases which, he considers, have an allergic basis. The diseases included are urticaria, bronchial asthma, hay fever, angio-neurotic œdema, certain forms of enteritis, migraine, epilepsy, the toxicities of pregnancy, Henoch's purpura, metabolic diseases associated with joint conditions, infectious diseases, and some cutaneous diseases. This list is truly formidable, and the casual reader may think that Prof. Kämmerer pushes his theories too far, but the more carefully the line of argument is followed the more obvious it becomes that there is a case for our consideration. The modern work on histamin, on the vegetative nervous system, and on the endocrines are all dealt with fully, and there is a particularly good critical review of Widal's hæmoclastic crises. Although we may not be able to go all the way with the author in his conclusions, we cannot fail to appreciate the thoroughness with which the material has been investigated and put together. A questionnaire at the end of the book includes no less than 87 questions to be answered in the investigation of the causation of asthma on an allergic basis. Those who wish to follow the subject further will find references and a good subject index in Prof. Kämmerer's book.

[1] Angina Pectoris. Ergebnisse der Gesamten Medezin. Urban and Schwarzenberg, Berlin and Vienna.

[2] Allergische Diathese und Allergische Erkrankungen. Munich: S. F. Bergmann. 1926. Pp. 210. M.13.50.

SYPHILIS IN GENERAL PRACTICE.

PUBLIC discussion of the problems of venereal disease is a recent innovation; it is only a decade since a leading daily paper acknowledged their existence by admitting the word "syphilis" into its columns. Although, however, the treatment of this disease is being spoken of more and more freely, both inside and outside the medical profession, a discussion at the Royal Medico-Chirurgical Society of Glasgow last week showed that many specialists find that the management of venereal cases by general practitioners leaves much to be desired. As Dr. W. H. Brown remarked in his opening paper, "the key to preventing the ravages that follow syphilitic infection, and the social and family calamities that arise therefrom, is early diagnosis and early treatment. . . . Every genital sore should be looked upon as possibly syphilitic until it has been proved the reverse. No one, however expert, is justified in assuring a patient from one or even several examinations that he has not contracted syphilis." All the speakers agreed on the rarity of the so-called typical Hunterian chancre. Dr. Madeline Archibald said that, out of 400 patients from her routine practice whose blood had been tested, no less than 100 were found to have a positive Wassermann, but only 7 of these could recollect having had a typical primary chancre. Although these figures are perhaps unusual, it is of the highest importance that the first lesion should always be recognised, even when it does not conform to type, and to this end, said Dr. Brown, every patient with a suspicious sore should be kept under observation for three or four months, even if repeated search has failed to reveal the pallid spirochæte. The importance of Wassermann tests in all cases where there are doubtful signs is sufficiently evident. Dr. Archibald pleaded for the early administration of neo-kharsivan, even amidst the routine of a busy practice, provided that the contra-indications are known and observed. In recent syphilis, as Dr. J. Ferguson Smith remarked, the physician's motto should be, "strike early and strike hard." Dr. Brown regards intravenous injection of one of the salvarsan preparations as the sheet-anchor in most early cases. The arsenic should usually be supplemented by mercury or bismuth. Practically every patient, in his opinion, should

receive 20 to 25 injections, despite the demand that such persistent treatment makes upon both patient and doctor. Although this intensive medication admittedly subjects the patient to a risk, he believes that the late results of uncured syphilis are so terrible that this risk must be taken. The urine should be carefully watched, but Dr. Smith considered that albuminuria in untreated secondary syphilis was not an absolute contra-indication to the use of neo-kharsivan. In tertiary syphilis, where the patients are usually older, less infectious, and not such good risks, a milder course of treatment might be sufficient. Nor should the practitioner forget the frequency with which unrecognised syphilis might modify such unrelated conditions as varicose ulcers, ununited fractures or cuts which would not heal. Dr. Archibald enunciated a modification of Colles's law as follows: "The mother of a syphilitic child suffers from syphilis of a latent variety, showing no clinical manifestations of the disease throughout her child-bearing life, with the exception perhaps of a positive Wassermann, but in the absence of treatment tertiary lesions may declare themselves during the post-climacteric period." She pointed out that the primary sore in the female is very difficult to detect, and that the first indication of syphilis in a woman is often the birth of a tainted child or late symptoms after the menopause. She acclaimed the treatment of conceptional syphilis as the most hopeful contribution ever made to public health by the syphilologist. Dr. W. H. Scott said that infants tolerate large doses of arsenical preparations, which may conveniently be given into the scalp veins. Seeing that the liver is practically always affected in congenital syphilis, it was curious that a drug which was markedly toxic to the liver of adults had never been known to produce jaundice in a baby. On the other hand, Dr. O. H. Mavor pointed out that late effects on the reticulo-endothelial and endocrine systems must not be forgotten, and that a certain proportion of supposedly infected children are not really suffering from syphilis, but only give the reaction of the maternal blood. Dr. T. K. MacLachlan said that the older remedies are better for neurosyphilis than the modern ones, the best results being obtained with a mercurial inunction followed by potassium iodide for meningovascular syphilis. Dr. Mavor, however, believed that specific intramuscular medication was undoubtedly helpful in causing the disappearance of bronchitis and cardiac pain, correcting cardiac irregularity, producing a consistent fall in the blood pressure, reducing the size of aneurysms, and increasing the sense of well-being. Dr. Douglas Adams suggested that pyrexial treatment would be more logically employed in the primary stage instead of being deferred until the patient was dying of general paralysis. He pointed out, in common with many other speakers, the urgent need for further investigation into the distribution of the spirochæte, its relation to tissue change, its localisation after the secondary stage, and its cultural and experimental properties. There was general agreement on the need for coöperation between pathologist, specialist, and general practitioner.

AMICABLE SUPERSESSION.

A PRACTITIONER asks for a ruling on the correct ethical attitude under the following circumstances. During a holiday a fellow practitioner and friend (B) saw his (A's) private patients for him. One house which B attended for A wishes B to continue in attendance as his fees are lower than A's. Another patient of A's wishes to go on with B whose evening surgery suits him better than that of A who has no evening hour. Should B acting as a locum-tenens under any conditions consent to continue attending A's patients? If he does, should he pay A any recompense such as half fees for a year? This is what A did himself 15 years ago in respect of the only case he ever took over in his capacity as locum. In that case the patient refused to go back to the principal, whose diagnosis and treatment he regarded as wrong. There is no suggestion of dissatisfaction in the present case. If B refuses attendance the patient would contentedly remain with A. The situation thus described is not uncommon and should not present any great difficulty, especially as it is for reasons of practical convenience, and not on any professional grounds that the patients are retaining permanently the services of the locum. Apart from the very special case where there is suggestion of sharp practice, the rule cannot be laid down that under *no* circumstances can the locum remain in attendance; the situation should be avoided as far as possible, but an inflexible rule would either be ignored or would result in the loss of the patient by both practitioners. Where the situation cannot be avoided we feel—and this feeling has been recognised in practice—that a certain proportion of the fees received from the transferees are due for a period to the original practitioner. No precise arrangement has been sanctioned, as far as we know, by any ethical body, but we have heard of one association of doctors which insures itself against unpleasantnesses under this head. Of the five or six members forming the group, one undertakes the whole secretarial work of the practices, his dispenser keeping the books and accounts. When a member goes on holiday one of his colleagues, the next on the rota, does the extra work, receiving two-thirds of the receipts, the holiday-maker one-third. This is done on a simple card system; the extra worker takes out cards for each patient of the absentee, records his doings thereon, and sends them in to the secretary to be priced. They are checked, altered if necessary, and paid in by the returned holiday-maker, who collects his third in the usual way. If a member falls ill his work is done by a member of the group who in this case takes one-third, the invalid two-thirds. Should a patient forsake his doctor for another member of the group that member pays two years' purchase for him, the amount being calculated on the amount brought in on an average of three previous years. The successful running of such a scheme implies mutual trust, and it is evidently desirable for the group to include all who have considerable practices in the locality.

IODINE AND GOITRE.

IN a recent report to his education authority Dr. W. M. Ash describes an experiment, arranged by his predecessor, to test the effect of administering iodine widely in a goitrous county. In a selected area of Derbyshire the public water-supply was iodised and iodised sweets were supplied weekly to the children of certain schools, beginning in January, 1925. In the first school, where both water and sweets were taken, the percentage of goitrous girls was 24·5 on Feb. 26th, and had gone up to 66·9 on Dec. 10th. In the second (an infants') school, no iodised sweets were taken, only the iodised water; on Feb. 27th the goitrous percentage was for girls 29·6, for boys 18·6; on Dec. 11th, 42·3 for girls and 26·0 for boys. In the third school, where the girls, aged 7–14, received sweets during the first half of the year and iodised water during the second half, the goitrous percentage in February, 1925, was 46·8, and in January, 1926, was 51·5. An experienced practitioner, Dr. Philip Turton, made all the examinations of the children. The experiment was on a small scale and is to be continued during 1926, but Dr. Ash has advised the discontinuance of the iodisation of the water-supply. In a similar experiment at Rochester, U.S.A., which Dr. Ash quotes, the water-supply was iodised twice a year for about two or three weeks, and the yearly dose of sodium iodide was estimated at about 7·5 mg., as compared with 14·9 mg. in the Derbyshire experiment. At Rochester it was claimed that the goitrous children were reduced in number from 3844 in 1923 to 1766 in 1924, but the figure for 1925 shows an increase to 2010. In a closely reasoned statement Dr. Ash discusses the iodine deficiency theory of goitre, remarking that goitre is or has been found near the sea, where there is presumably plenty

of iodine in the air—e.g., the Maritime Alps, the shores of the Mediterranean, the plains of the river Po, the Isle of Arran, the delta of the Ganges, the Isle of Wight, Cumberland, Somerset, and the seaboard of the South Island of New Zealand. He rejects the assumption that every enlarged thyroid is a diseased condition, and agrees with R. McCarrison that thyroid enlargement in children is frequently physiological and disappears spontaneously. Stress and strain, he thinks, may have something to do with the enlargements, while a nutritional factor may also be at work. Dr. Ash founds his opinions partly on personal observation and partly on the replies to a questionnaire circulated by him to doctors practising in Derbyshire. The conclusions reached by him from the study of these replies are as follows: (1) In practically all districts there has been a diminution in prevalence. (2) The proportion of females to males affected varies from 3 to 1 to 10 to 1. (3) Where the water-supply has not been improved the prevalence of goitre has remained stationary. (4) There seems to be a connexion between the presence of goitre and hard waters containing sedimentary pollution. Goitre is more prevalent in the limestone districts of the county than on the millstone grit. (5) The type of goitre in the past was the huge cystic and adenomatous goitre. The present type is smaller and softer. Dr. Ash quotes Sir James Berry as an authority who regards the iodine deficiency theory as unproven, and holds that iodine treatment for goitre should be carried out with discrimination and not by wholesale medication. Sir Alexander Houston, who has discussed the question of adding iodine to water-supplies in his last three reports to the Metropolitan Water Board, also advocates caution. In America Dr. C. L. Hartsock, of Cleveland, has been led to doubt the advisability of the general use of iodised salt by observing a large number of cases of hyperthyroidism among middle-aged men and women who have been taking iodine.[1] Apparently iodine is sold largely for its anti-goitrous action in pharmacies and grocery stores of the Middle West. On the other hand, in the August number of the *American Journal of American Sciences* Dr. K. A. Martin claims to have obtained great benefit from the administration of iodine in cases of simple goitre associated with symptoms which he ascribes to iodine deficiency, and the success achieved by the iodisation of the salt-supply in certain Swiss cantons seems to be generally admitted. The proportion of children aged 12-15 with thyroid enlargement in the Cincinnati schools is high—38 per cent. in boys and 59 in girls—and a recent U.S. Public Health Report[2] gives data for the belief that these children are definitely inferior in certain physical measurements. It might seem, on the face of it, a curious proceeding to give the whole of a community iodine because a certain number of its members suffer from goitre or to give a whole family iodised salt in order that one member may benefit, but it is reasonable to normalise the intake of iodine in a community where there is reasonable suspicion that many members are suffering from its deficiency.

SERUM TREATMENT OF GONORRHŒA.

IT is generally recognised that when some complication arises in the course of an ordinary attack of gonorrhœa the acute discharge almost immediately undergoes a change. There is a reduction or total disappearance of the discharge and in many cases this reduction is permanent; when the complication resolves the gonorrhœal infection is found to be at an end. In such cases it might be well to regard the complication as a metastasis. Even when the urethral discharge reappears in these cases the bacterial picture is altered; in films the gonococci are rare and mostly extracellular, and many other organisms are present in the film, as is common in old chronic infections. The cause of this change is not understood, but Dr. E. Sterian, of Bucharest, in a recent address to the Vienna Congress of the German Urological Society, has interpreted it as an immunising process which he explains as follows. The immunisation is due not to the gonococcus alone, but to a mixture of organisms. Likewise, each attack of gonorrhœa is due to an invasion, not by the gonococcus, but by a mixture of organisms; the aerobic gonococcus is allied—apparently necessarily allied—with facultative aerobes, with facultative anaerobes, and with strict anaerobes. According to Dr. Sterian, the disease resolves itself into three phases. First the gonococcus invades the polymorphonuclear cells, kills them, and frees the protoplasm by disruption of the cell. Secondly, the facultative aerobes—e.g., staphylococci and streptococci—seize this protoplasm and by their ferments split it into peptones and polypeptides. Thirdly, the facultative anaerobes, such as *B. coli*, seize the peptones and polypeptides and split these still further into such products as indol, which are responsible for the fœtid smell of the discharge. If this is accepted it will be seen that the grouping of microbes is not fortuitous, but determined by the chemical changes of protein necessary for the life of members of the alliance. Acting on this assumption, Sterian had produced a polymicrobic serum; this he obtained by injecting the discharge into the tunica vaginalis of a horse and thence later to the peritoneal cavity. Serum taken from horses thus treated has been injected into patients suffering from severe gonorrhœa, and Dr. Sterian states that he has had considerable success, especially in removing severe complicated infections. Several controversial principles are, however, involved in his claims. It is by no means universally agreed that gonorrhœa is an infection by a mixture of organisms, at any rate at the outset. Dr. Sterian also makes a large assumption when he regards improvement following on the occurrence of a metastasis as due to specific immunity. Many factors may be involved; fever, for instance, may play a part. The results of treatment with serum, which have not, so far, been uniformly favourable, are also possibly due to other factors. In this department of medicine protein shock therapy has occasionally had successful results, especially in gonorrhœal arthritis. The gonococcus produces an endotoxin, and so far as is known, no exotoxin; medical experience of such organisms suggests that they are unlikely to yield readily to serum therapy. The production of a serum by the use of a polymicrobic antigen is novel in its conception and must involve new methods to secure standardisation and estimation of potency; these are not disclosed by Dr. Sterian.

THE WORK OF THE MILBANK TRUST.

AMERICAN public health administration is distinguished by the intensive manner in which in one area or another special reforms have been pushed forward with a fervour which is scarcely known on this side of the Atlantic. New York City, under the leadership of the late Dr. Hermann Biggs, was a pioneer in utilising the bacteriological laboratory as an aid in administration. In many American cities and counties at the present time energetic campaigns are progressing to secure a population immune against diphtheria. In some rural areas, especially in the south, concentrated attention has been devoted to immunisation of the population against enteric infection; though evidently as sanitation and sanitary administration become developed, such immunisation will be rendered unnecessary. But the work of the Milbank Memorial Fund[1] stands out by itself among American demonstrations, in its wideness of scope and broad sweep of policy. This Fund was founded a few years ago with a large capital, which is being administered by a board of directors and advisory council numbering among its members some

[1] Jour. Amer. Med. Assoc., May 1st, 1926.
[2] Vol. xli., No. 36, Washington, 1926.

[1] The annual report for the year 1925 may be obtained from the offices of the Fund, 49, Wall-street, New York.

very distinguished names in science and medicine, and a large part of its income is now being devoted to three special demonstrations, one in a section of New York City, one in the City of Syracuse, and one in the county of Cattarangus in New York State. The two last named have been sufficiently long at work to show the importance of the experiment and the prospect of successful results. What the Milbank Trust does in undertaking a demonstration is to approach the local public health authority of the district concerned with an offer of financial help to provide additional workers, to pay present officials on a full-time basis at an adequate rate, to pay for active public health propaganda, and in various other ways to make local health administration as complete and as satisfactory as is possible in view of local conditions. In each area the financial assistance of the Fund is regarded as supplementary to, and as not in the slightest degree supplanting the efforts of, the local governing body or of existent local voluntary agencies. The responsibility and the authority of the local authority remain supreme; and the method adopted by the trustees of the Fund is one which is designed to secure continued local support and to enable the local authority to continue the same high standard of work at the end of the series of years during which it is intended to continue the coöperative experiment. Thus it is anticipated that by means of the demonstration several objects will be attained:—

1. A fairly rapid rise in the local standard of public health administration.
2. By local experimentation there will be a "testing out" of methods of administration which will secure the maximum effect for a given expenditure of time, effort, and money.
3. The benefits of efficient and complete sanitary work will be demonstrated to the local authorities concerned, and other cities and counties will be stimulated to more rapid progress than is at present being realised.

Each demonstration operates in a setting of local official agencies; it does not supersede, but serves to strengthen these. But while this programme is sound in principle, it is evident that measurement of progress made—whether by vital statistics or by details of administrative work accomplished—must be difficult. In the two areas in which most work has been done there is evidence of improving sickness and death-rates; and a detailed examination of activities in the special departments of work shows improved machinery, greatly extended work, increasing collaboration with private medical practitioners, and a degree of public interest in the details of the work which is encouraging. In this country it is doubtful whether these methods would achieve similar results, but the further course of the experiments will be watched with interest.

POTTERS' ROT.

THE pottery industry has long possessed an unenviable reputation for subjecting its employees to two definite occupational risks—lead poisoning and phthisis. The former, although it has by no means disappeared, has lost many of its terrors since its method of causation, by dust inhalation, was recognised, since compensation was awarded to its victims, and means for its prevention were adopted. More persons are employed in the industry to-day than in 1900, but there are now less than 50 cases of plumbism annually, and those cases are not so severe as the 210 cases of 1900 and the 113 cases of 1901. Much less has been heard about phthisis in the industry, known locally as "potters' rot," just as the same condition in the Sheffield cutlery trade is known as "grinders' rot." The disease is now known to result among potters from inhaling dust of flint, which is pure silica. Flint dust occurs in many pottery processes from the time the flints are ground in mills to the use of the powder in mixing the earthenware for the saggars in which the articles are placed during burning. After long periods of occupational life, generally ten years and over, inhalation of fine silica dust results in the formation of fibrosis, or silicosis, in the lungs. This condition may in itself incapacitate or even kill its possessor; but far more frequently the victim falls a prey to tuberculous infection, which in such a case runs a rapid and usually fatal course. The Workmen's Compensation (Silicosis) Acts, 1918 and 1924, permit compensation to be awarded for silicosis in those industries to which those Acts have been applied; but so far only the Refractories Industries have been brought within the scope of the Acts.

The question, however, of applying the Acts to the pottery industry is now under consideration, and a report has just been issued[1] by the Home Office of a medical investigation undertaken to acquire information as to the prevalence of silicosis in this industry. The investigators had had previous experience as members of the Medical Board under the Refractories Industries Scheme; they examined 344 males and 224 females, finding silicosis in 76 males and 11 females. Radiography was employed to assist the clinical inquiry in nearly half the cases. One point of interest emerging is that pulmonary fibrosis was diagnosed by medical examination at an earlier period than that at which silicosis was visible in the X ray picture. This is in contrast with the finding of the Miners' Phthisis Bureau of South Africa, where radiography is claimed to give the most certain indications, but it should be remembered that pottery dust, which may contain flint, ball clay and china clay, may give a different pathological picture. The men and women examined were actually at work; hence tuberculous infection, which rapidly incapacitates for work, was not a feature of the cases seen and no sputum examinations were made. Evidence of tuberculous infection in cases of silicosis must rather be sought among mortality statistics than among operatives at work. No information is given in the report of the average composition and amount of dust present at the different processes, but the varying amount of silicosis found appears to bear a close relation to the known exposure to silica dust. The disease was not to be discovered among those exposed to dust of plaster-of-Paris in modelling and mould-making, or of red marl used for Rockingham ware. On account of their longer periods of occupational life, more males than females were found with silicosis; where the dust was of unmixed flint, 32 per cent. of the men examined were affected; where the dust was composite, 24·7 per cent.; but in other groups the disease was far less prevalent. The broad result indicates that silicosis is liable to occur in many branches of the industry, and exists to-day to a considerable extent. Reference is made in the report to the widespread prevalence of bronchitis among potters, but how far this disease is an independent condition or one coincident with silicosis is not indicated. Modellers, mould-makers and red marl workers, whose work need not bring them into contact with silica dust, could be excluded when a scheme of compensation is being drawn. Dr. E. L. Middleton, in a preface to the report, indicates some of the ways in which the risk can be greatly minimised. But some scheme is required to do immediate justice to the victims of silicosis, and, indirectly, to concentrate attention on means of prevention.

THE Tuberculosis Week-End organised by the two tuberculosis societies opens at 5 P.M. next Friday at the Royal Society of Medicine with a paper by Dr. Strandberg, of the Finsen Institute.

THE next session of the General Medical Council will commence at 2 P.M. on Tuesday, Nov. 23rd, when Sir Donald MacAlister, the President, will take the chair and give an address. The Council will continue to sit from day to day until the termination of their business.

[1] Report on the Incidence of Silicosis in the Pottery Industry. C. L. Sutherland and S. Bryson, London: H. M. Stationery Office. 1926. Pp. 52. 1s. 6d.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXCVII.

TREATMENT OF DISTENSION OVERFLOW OF URINE.

BY the phrases "distension overflow" or "false incontinence" is meant that condition in which the urinary bladder is full and voluntary micturition is impossible, but dribbling of small quantities of urine occurs involuntarily at frequent intervals. The condition is brought about by interference, either mechanical or nervous, with the mechanism of micturition. It occurs most commonly in cases of enlargement of the prostate gland, other common causes in men being urethral stricture and tabes dorsalis. In women it is sometimes due to the retroverted gravid uterus or other pelvic tumours obstructing the outflow of urine by pressure on, and longitudinal stretching of, the urethra. In children a pin-hole meatus or a tight phimosis may be responsible. For the sake of precision, distension overflow following enlargement of the prostate will here be described.

Symptoms of Distension.

The symptoms complained of include thirst, headache, drowsiness, nausea, and the constant wetting of the clothes. There is complete inability to control the escape of urine but usually no pain. The patient is usually 50 or older, appears haggard and looks ill, the ammoniacal smell of decomposing urine is obvious. The tongue is dry and brown, and the mouth foul. The skin feels dry and inelastic. The heart is enlarged and hypertrophied, and the aortic second sound may be accentuated. The abdomen is distended, and the outline of an inverted pear-shaped swelling may be seen and felt rising out of the pelvis. This swelling is "tense-elastic" on palpation, and pressure on it may produce a desire to micturate, but often results only in forcing some urine out of the bladder. The tumour is dull to percussion, while the flanks of the patient are resonant. The swelling may extend above the umbilicus, and even within an inch of the xiphisternum. Per rectum the prostate may be pushed back by the vesical distension, but the gland is usually greatly increased in height so that the bladder base is reached by the examining finger with difficulty, if at all. The median groove on the dorsum of the prostate is obliterated, and the whole gland may project back into the lumen of the rectum. The patient feels ill, is nauseated and constipated, and worried by the constant dribbling of urine, but the urgency of his condition is much less apparent to him than to his medical attendant. The impulse immediately to pass a catheter and relieve the distension of the bladder must be resisted, especially when the patient presents himself in the consulting-room. The risks of the immediate complete relief by catheterisation of a patient suffering from distension overflow are so great that such treatment is always dangerous and may well prove fatal. The sudden removal of the pressure of urine in the renal pelves against which the kidneys have been secreting appears so to upset the equilibrium that instead of continuing to secrete urine only the kidneys allow blood to permeate them, and the urine soon becomes porter-coloured and thick with mucus; or complete anuria may ensue. To avoid this risk the patient ought to be sent to bed immediately, a specimen of blood taken and its urea-content determined. This acts as a guide to his progress under treatment. It is best *not* to pass a catheter at this stage; the incontinence can be disregarded for the moment, every effort being concentrated on combating the uræmia that threatens the patient's life.

Measures to combat uræmia include:—

1. Unrestricted fluids by the mouth, such as water, barley-water, lemonade, weak tea.
2. Saline purges, so that one or two free evacuations are secured daily.
3. Diuretics such as caffeine, theocin, and theobromine may each be tried in turn until it is discovered which increases the urinary output most; the selected drug should then be pushed to secure its optimum action.
4. Excretion through the skin is encouraged by hot packs, hot-air baths, and the injection of pilocarpine. The patient is kept wrapped in blankets, and is well supplied with hot-water bottles.
5. The diet, when the patient can be induced to eat anything, must consist entirely of milk and glucose.

The progress of the patient may be gauged by the improvement in his clinical condition, and by the steady lessening of the urea-content of his blood. When the improvement ceases, then, and not till then, is it time to consider how the distension of the bladder may be relieved.

Methods of Evacuation of the Bladder.

The following technique of evacuation has given the best results in my hands.

1. Pass a large silk-web catheter—e.g., 20 F.—with the most rigid aseptic precautions and the utmost gentleness. The use of the large size catheter and the exercise of great patience in passing it will usually overcome any difficulty in entering the bladder. In the event of failure with the ordinary instrument, the "coudé" or "bi-coudé" catheters may be tried, and if they fail, a silver prostatic catheter of similar size will surely succeed. This last weapon, however, is a dangerous one, and should be used only by an experienced operator.
2. When the catheter has been passed it should be tied in, the escape of urine being first controlled by plugging the exit with a spigot.
3. The height of the fundus of the bladder is now marked with a skin pencil on the abdominal wall, and six ounces of urine allowed *slowly* to escape. The spigot is then reinserted firmly, and the height of the bladder again marked.
4. Four hours later another six ounces of urine are allowed to escape *slowly*, and the height of the bladder marked. If this height is greater than that at the end of removal of the first six ounces, then more urine should be let out slowly till the bladder sinks to a level slightly lower than that indicated by the second mark on the skin. The new level of the fundus is then marked.
5. At the end of every period of four hours the procedure described above is carried out. This gradual emptying of the bladder may occupy several days, the organ gradually recedes into the pelvis, and finally empties.

If during the tedious emptying process the catheter becomes foul, or pus begins to exude between it and the wall of the urethra, then the catheter must be carefully changed. If by accident the spigot comes out, and urine escapes suddenly, the nurse must be instructed immediately to fill the bladder with boric lotion up to its former level. If symptoms of uræmia such as drowsiness, headache, or thirst reappear, or if the tongue become dry, or the urea-content of the blood increase, then the rate of withdrawal of the urine must be slowed and the general measures against uræmia pushed with renewed energy. If any blood appear in the urine withdrawn the rate of emptying must be checked immediately.

It will be seen that this method of evacuation aims at relieving the abnormal "back pressure" by such easy stages that the already damaged kidney function is as little interfered with as possible.

When the bladder is empty the catheter is removed, and the patient may be able to pass water again naturally. The subsequent treatment depends on the state of the patient's general health. Usually operation to remove the cause of obstruction is not advisable till one or two months later, but if the patient seems very well it may be undertaken within a fortnight. Most of these patients will be unable to pass urine satisfactorily pending operation for prostatectomy. They will therefore be better off and safer from another attack of retention if they are provided with a suprapubic drain.

The Avoidance of Trauma and Infection.

Before deciding to adopt the procedure described above I have tried many methods to avoid trauma incidental to the tying in of a large catheter for long periods, and the infection that occurs so frequently

in spite of the most elaborate precautions. Among these methods were: (1) drainage of the bladder with ureteric catheters passed into it either directly when possible or through a catheterising cystoscope; (2) suprapubic drainage with a self-retaining catheter inserted by open operation, and tied into the bladder wall with a purse-string suture; (3) tapping of the bladder suprapubically under a local anæsthetic through a small one inch incision in the skin with a trocar and cannula sufficiently large to permit the passage through it of a large self-retaining catheter. These were abandoned because in (1) the small lumen of the ureteric catheter was liable to become blocked, while the shock, inseparable even from small operations such as were involved in (2) and (3), appeared to prejudice the patient's chances of recovery. I have not tried the device of connecting a catheter tied in the bladder to a reservoir of boric lotion maintained at such height that the outflow of urine is very gradual. Theoretically this ought to be the most successful of all in the treatment of this condition. Its objects are those of the method recommended above, the only difference being that the evacuation of the bladder may be carried out even more gradually by this means than by the procedure I am accustomed to use. The disadvantage of the hydrostatic method is that it requires more apparatus and is rather more difficult to watch than the simple method which I have found successful.

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Special Articles.

SOUTH AFRICAN INSTITUTE FOR MEDICAL RESEARCH.

ANNUAL REPORT.

THE continuous ill-health which led to the resignation of Dr. W. Watkins-Pitchford, the former director of this Institute, prevented him from preparing the annual report for 1925. It has now been issued[1] by Sir Spencer Lister, who on August 1st assumed the post of director, and whose recently augmented staff is as follows:—

Research Division.—Bacteriologist and Pathologist: Dr. J. H. Harvey Pirie. Fellow in Industrial Hygiene: Dr. A. Mavrogordato. Parasitologist: Dr. Annie Porter. Honorary Protozoologist: Prof. H. B. Fantham. Entomologist: Dr. A. Ingram. Biochemist: Dr. F. William Fox.

Routine Division.—Superintendent: Dr. G. Buchanan. Senior Pathologists: Dr. J. G. Becker, Dr. A. Sutherland Strachan, and Dr. F. W. Simson. Assistant Pathologists: Dr. D. Ordman, Dr. L. W. Barlow, and Dr. W. K. Dunscombe.

Sir Spencer Lister reports that the total cost of maintenance of the Institute as a whole, for the financial year ended on March 31st, 1926, was £35,768, an increase of over £6000 on the cost for the preceding year being due to the establishment of new departments in the research division. The cost of maintenance of this division for the year accounted for £16,451, whilst that of the routine division accounted for £19,317. The cost of the research division was met by contributions in equal proportions from the Union Government and the Witwatersrand Native Labour Association. In the routine division the expenditure was fully met by the revenue earned from the sale of vaccines and sera, and from the performance of routine pathological and other examinations for the Government, hospitals, municipalities, the mining industry, and the medical profession.

[1] Published by the South African Institute for Medical Research. P.O. Box 1038. Johannesburg. 1926.

Considerable expansion has taken place during the year in the research division, to which departments of medical entomology and biochemistry have been added, whilst the department of bacteriology has been expanded by the addition of a branch dealing with plague research. In connexion with this latter, field investigations have been carried out at a camp maintained in the Orange Free State Province. A survey of the mosquito and molluscan carriers of malaria and bilharzia, respectively, has also been initiated and a field officer appointed for this purpose. This work will probably be extended at an early date. A new arrangement has been entered into with the University of the Witwatersrand under which the Institute has become responsible, through its officers, for the staffing and development of the department of pathology and bacteriology of the medical school. The additional laboratories and other buildings, the erection of which was commenced two years ago, have now been completed and have been brought into commission. New roadways are also being made, and the whole of the grounds enclosed within a boundary wall and railing, these improvements having been made possible by a grant of £5000 for this purpose from the Witwatersrand Native Labour Association.

Activities of the Research Division.

Plague.—Some ten species of veld rodents have been tested for their susceptibility to plague, and all have been found to be more sensitive to infection than the guinea-pig or the black rat. The species of practical importance in the spread of plague on the high veld are the Lobengula gerbille, the multimammate mouse, and the ground-squirrel, and in lower, more bushy country, the striped-mouse. Lobengula gerbilles have been found to be very cannibalistic in their habits, readily eating any sick or weakly member of their community. Plague is readily transmitted amongst them by eating infected comrades, and evidence has been adduced suggesting that plague may be actively spread amongst them by feeding as well as by fleas. It is not thought likely, however, that spread by feeding is a method of any importance in other species of veld rodents.

Cuti-vaccination, which has been found satisfactory in the prevention of anthrax, was found to be of no protective value against plague. Sensitised vaccines were not found to be of any greater value than ordinary killed vaccines either in prophylaxis or treatment, and mercurochrome was found valueless.

What is believed to be a new disease, caused by a hitherto undescribed Gram-positive motile bacillus, has been found in gerbilles; the essential pathological lesions are extensive necroses in the liver and spleen with bacteræmia. It is proposed to try on a large field scale whether or not the disease can be turned to practical use for the extermination of gerbilles.

The entomological work done during the year has been concerned entirely with the investigation of plague, and has been mainly confined to the collection and examination of the ectoparasites of the small carnivora and rodents of the veld.

Industrial Hygiene.—An attempt has been made to correlate underground conditions with the incidence of silicosis by studying the historical aspect of the disease as met with on the Witwatersrand. Methods for the further improvement of underground conditions with respect to dust prevention, and for the closer control of tuberculosis, have been investigated. Additional studies have been undertaken concerning the part played by bacterial infections of the lungs as an important factor in the production of silicosis. A consideration of the evidence available suggests that tuberculosis is now the dominating factor in the disabling and fatal form of miners' phthisis now met with on the Witwatersrand, and that it is quite as important to study environmental conditions from the point of view of tuberculosis as it is from the point of view of air-borne phthisis-producing dust. It appears probable, on the strength of experimental and

autopsy findings, that dust inhaled can facilitate secondary infections, tuberculous and otherwise, before it has produced a recognisable clinical silicosis. From the point of view of underground conditions estimations of air-borne dust afford a valuable measure when dust concentration is comparatively heavy, but are not so useful when dust concentration is comparatively light. A steady fall over a period of years in dust concentration is not associated with a corresponding fall in silicosis incidence. An explanation suggested is, that after air-borne dust has fallen to a concentration at which it will not produce disabling lung lesions per se, it still facilitates chronic respiratory infection, particularly when much water is used for dust-laying.

Schistosomiasis and other fluke infestations have been investigated. A total of 1827 snails was examined for flukes during the year. Some experimental work with fluke larvæ obtained from *Limnæa truncatula* established that this snail, which is the common host of liver fluke of sheep in Europe, was also a host of *Fasciola hepatica* in South Africa.

Parasites of Plague Rodents.—A beginning has been made on a survey of the animal endoparasites found in rodents that carry plague, and some interesting results have already accrued, including the finding of a fluke in the intestine of the gerbille, *Tatera lobengulæ*.

Routine Division.

The total number of investigations carried out in the routine division of the Institute during the year ending Dec. 31st, 1925, was 52,844. This is an increase on the figure for 1924 of 11,011. Examinations for *B. pestis* in humans totalled only 78 in 1925, as against 193 in 1924. The relative number of positive results is also less this year (21·8 per cent., as against 33·7 per cent. in 1924).

Post-mortem examinations made on behalf of the Johannesburg General Hospital numbered 342, as compared with 428 in 1924.

The routine tests done in the biochemical department continue to increase steadily, the growing appreciation of the value of blood analysis being specially notable.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Patent Medicine Nuisance.

THE very large output of German chemical factories, although gratifying from the national point of view, is in some respects less beneficial to the medical profession. Compounds are invented in such numbers that it is almost impossible for the average practitioner to follow their progress. The profession is drowned in advertisements of new products, and there is hardly one day all the year round when the doctor does not receive by post an advertisement of some new compound, with information concerning its effects. Sometimes this information is supplied by medical men of good standing—even by hospital physicians and their assistants; sometimes it is written by people who are little known to the profession. Often samples are sent with the circulars, and quite often agents of the various factories call at the consulting-room of the medical man to draw his attention to the new remedy. These agents are sometimes younger medical men who for financial reasons have not yet been able to settle down; sometimes widows or children of deceased practitioners are employed in the work, so that it is difficult not to receive them. Most of the new compounds—whether in the form of tabloids for oral use or as ampullæ for subcutaneous injection—soon disappear to make room for newer compounds advertised in the same way. Some, however, become familiar to the profession, and medical men are now accustomed to prescribe tabloids and ampullæ produced in bulk by the chemical factories, instead of having their prescriptions dispensed according to the requirements of individual patients. The apothecaries, in consequence, are losing their dispensing skill, as their work is chiefly the sale of ready-made compounds. This state of affairs is causing chemists to ask what is the good of their learning and studying pharmacy for several years if at the end of it all they are to become mere dealers in the products of chemical works. A proposal has been made to convene a committee of medical men, hospital physicians, pharmacologists, and apothecaries, so that measures may be devised to remedy the nuisance.

The Virus of Scarlet Fever.

Prof. Ulrich Friedemann, physician-in-chief to the department of infectious diseases at the Virchow Hospital, recently read a paper before the Berlin Medical Society on the transmission of scarlet fever. According to researches of the Dicks, a streptococcus termed *S. hæmolyticus scarlatinæ* is the causal organism of the disease. Prof. Friedemann, who has had a large number of scarlet fever patients in his department, is now able to give the results of his own investigations into the subject. He found that when a culture of streptococci was inoculated into the tonsils of an assistant (a willing coöperator in the experiment) typical scarlet fever developed, and the patient's serum gave excellent results in the treatment of scarlet fever in others. The disease, he states, is transmitted by droplet infection from secretions of the mouth. The old idea that scales from the skin of convalescents are responsible for infection is a mistaken one. Prof. Friedemann examined the scales of 50 patients, and only in one did he find streptococci in the desquamation; all the rest were sterile. He ascertained, however, that the streptococcus is not only present in the tonsils and in the mouth, but also in purulent secretions such as pus from a complicating otitis media. The streptococcus was further found on the walls of sick-rooms, on the beds, curtains, and utensils used by the patients, and in great quantity also in the air of the rooms. These results led him to recommend as absolutely necessary thorough disinfection of sick-rooms at the end of the illness. On the tonsils streptococci were often present six weeks after the attack was over, although they did not cause any symptoms. The time of isolation should, therefore, be longer than the usual six weeks, for children sent home thus prematurely may easily infect healthy members of their families. Before being dismissed from a hospital, convalescents should be kept for some time in a separate room where they are safe from streptococci in the air.

Death of Prof. Heubner.

The death is announced of Prof. Otto Heubner, who formerly occupied the chair of pædiatrics at Berlin University. His principal service to medicine was that he invented new methods of feeding infants, and gave warning against the too lengthy sterilisation of milk. He was also one of the first to recognise the great value of Behring's discovery of the use of serum in diphtheria, which he could administer on a large scale in his department in Leipzic. A standard work on the diseases of children was published by him in 1903. Prof. Heubner was born in 1843 in Vogtland, Saxony, and throughout his life showed himself a Saxon in speech and temperament. In 1894 he succeeded Prof. Henoch in Berlin, and became the first ordinary professor of pædiatrics at a Prussian university. Up to this time there were no chairs in this or any other special branch of medicine, but Prof. Heubner's struggle for the acknowledgment of pædiatrics has so far succeeded that now nearly every German university appoints an ordinary professor to teach the subject. Prof. Heubner remained at work in Berlin until 1913, then retiring to live in Dresden, where he has now died at the age of 83. His son is the well-known professor of pharmacology at the University of Göttingen, Prof. Wolfgang Heubner.

Medical Women.

According to recent statistics the number of qualified medical women in Germany is 327, of whom

152 are married. It is interesting to know that 68 of them are married to medical men; 25 of the 31 medical women in Munich and 8 of the 15 in Frankfort have doctors as husbands. The unmarried belong for the greater part to the younger generation who have recently settled in practice. Medical women, as a rule, prefer residence in large cities to smaller towns or the country. In Berlin 5·6 per cent. of the profession belong to the female sex; in the medium towns the percentage is much smaller, and in the country there are scarcely any medical women engaged in practice.

The Berlin municipal authorities have decided that patients in the municipal hospitals who supply blood for purposes of transfusion shall receive an allowance of M.10–30 (10*s.* to £1 10*s.*) according to the quantity of blood taken. In this way the difficulty of getting volunteers may be avoided.

The Trustees of the Rockefeller Foundation have declared their willingness to give 250,000 dollars to the Munich Institute for Psychical Research, for the erection of a new building, on condition that 15,000 dollars are provided from other sources for its maintenance and working. The city authorities of Munich have given already an area in one of the suburbs to the institute without demanding payment. Prof. Kräpelin, until his recent death, was the institute's director.

The city of Nürnberg and several other cities have decided that henceforth no advertisements of breweries shall be allowed in public places, in municipal buildings, and in tramcars. They point out that by these advertisements alcoholism is promoted, and that the city has to spend much more money for the care of drunkards than it gains from the advertisements.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

The Rotunda Hospital.

THE tenure of office of Dr. Gibbon FitzGibbon as Master of the Rotunda Hospital having come to an end, Dr. Bethel Solomons has been elected to succeed him. Dr. Solomons was assistant Master of the Rotunda Hospital during part of the Masterships of Dr. E. Hastings Tweedy and Dr. Henry Jellett, and for the past 12 years has been gynæcologist to Mercer's Hospital. He has written a "Handbook of Gynæcology," now in its second edition, and has edited Dr. Tweedy's "Practical Midwifery." He has been President of the Section of Obstetrics of the Royal Academy of Medicine in Ireland, President of the Dublin University Biological Association, and is at present Vice-President of the Royal College of Physicians of Ireland. In his younger days he was an International Rugby player, and he keeps up an interest in athletic sport. His energy and personality cannot fail to make his influence as Master of the Rotunda powerful in the obstetric world.

University College Medical Society.

At the opening meeting of the University College Medical Society, held last week, Dr. E. T. Freeman, the President, read a thoughtful paper on Medicine from Three Angles. He discussed the changes that had taken place in the practice of medicine and in the relation of the public to medicine in the past 15 years. There had been a gradual diminution in the incidence of the infectious diseases and of the great killing diseases, and medicine nowadays was mainly concerned with investigating slight departures from health. The greater complexity of investigation required a large extension of hospital treatment, so that the hospitals, originally intended as refuges for the poor, were now largely used by the poorer middle-class, a class able to bear a share of the cost. Dr. J. F. O'Carroll, in proposing a vote of thanks, discussed the real value of an increased expectation of life, and urged young medical men to pursue their profession in a spirit of perfect honesty toward themselves and their fellow men. The vote was seconded by Mr. T. Hennessy, who criticised the attitude of the public and of the legislature toward questions of health. The new county hospitals were, for the most part, indistinguishable from the old workhouses, and were as backward as they were 30 or 40 years ago. Medical inspection of school-children was only carried out in two towns in the Free State. The State was unwilling to pay adequate salaries for scientific services. It was recently proposed to appoint a whole-time bacteriologist to the Ministry of Agriculture, and the person appointed, who should be a Bachelor of Science or hold an equal qualification, was to receive the salary of £100 a year. Dr. R. J. Rowlette and Dr. W. D. O'Kelly also spoke.

Sir Robert Jones in Dublin.

Sir Robert Jones paid a flying visit to Dublin last week in order to address the meeting of the National Children's Hospital. He urged the transfer of such institutions to the country, and spoke of the necessity of giving fresh air and sunlight to sick children. In the evening he was entertained at a special dinner given in his honour by the Rotary Club. Nearly 200 guests were present. In an address Sir Robert Jones said that he estimated that there were 12,000 or 14,000 cripples in the Irish Free State. Twenty-five per cent. of cases of deformity were due to rickets, and about 50 per cent. to tuberculous disease. The medical profession now knew enough, if it was given the opportunity, to eradicate these two diseases in a small number of years. About 50 per cent. of the cases of tuberculosis of the bones was due to milk and 30 per cent. to direct contact with the human consumptive. In England it had been found that one out of ten specimens of milk examined contained living tubercle bacilli. Sir Robert Jones thought that the work done in the Dublin hospitals which he had visited that day was splendid; but the conditions in which the surgeons in them worked were really almost pathetic. The surgeons and physicians were struggling to make the best of a bad machine. They were trying to imitate the sun by bringing in ultra-violet ray lamps. His feeling was that the best thing for them to consider with regard to these children's hospitals was to get them out into the country.

WIRELESS IN HOSPITALS.—The *Daily News* scheme for equipping the London hospitals with wireless has now been completed. Since the fund was instituted in May last year 122 hospitals have been equipped, and 13,456 head-phones and 479 loud speakers provided at a cost of a little more than £25,000.

THE LATE DR. W. R. POLLARD.—By the death of Dr. William Robert Pollard, at the age of 82, Blackburn has lost its oldest medical practitioner. He was a native of the town and was educated at the local grammar school, and after studying medicine in Dublin, qualified as L.R.C.S.I. in 1873, and M.R.C.P. Edin. in 1882. Returning to Blackburn, he started work there on his own account. Besides carrying on a large general practice he was medical officer to the Blackburn Union Infirmary from 1888 to 1912, by which time the calls on his services had grown so greatly that he had to give up this post. At the time also he was medical officer to the Church and Oswaldtwistle District Council, and honorary medical officer to the Blackburn Ragged School and the Blackburn Orphanage. His death left one ambition unfulfilled: he had wished to complete half a century's service as medical officer to the Blackburn Rural District Council—in another year he would have done so, for his appointment dated from 1877. The council and community greatly valued his services. On his retirement from the Blackburn Union Infirmary the staff presented him with a handsome gift of plate. He was very popular in the town and took a great interest in its affairs. Dr. Pollard leaves a widow, three married daughters, and two sons in the medical profession, one of whom is in practice in Blackburn and the other in Halifax.

Public Health Services.

RECORD CARDS AS AN INDEX OF EFFICIENCY.

A PSEUDONYMOUS correspondent to the *Times* recently described the examination of the record cards kept by insurance practitioners as a "medical inquisition." He thinks that "insurance doctors may be unjustly fined" as the result of an estimation of the number of entries on a sample of cards taken haphazard. The method he describes is what is known as a dipping audit which enables the Ministry of Health to classify practitioners as to whether they are or are not keeping records. We understand that where there is reason to doubt that the practitioner is neglecting this part of his contract a further stringent examination is made of at least 25 per cent. of his cards and in the estimation of the value of the records various tests are applied, such as the character of the clinical notes, the number of attendances given in certain cases of acute illness, and the average number of attendances and visits given to his patients generally. Disciplinary action is not likely to be taken until a very full investigation has been made. It can hardly be denied that the record cards constitute some index of a practitioner's efficiency.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are some of the 1925 statistics of two county boroughs, two large urban districts, and two cities :—

Name of district.	Estimated mid-year population (R.-G.).	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.	
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Heart disease.	Infant mortality.	Maternal mort. from childbirth.
Croydon C.B. .	199,300	17·1	10·9	0·92	1·60	1·8	1·3	55	3·8
Hastings C.B..	60,470	13·0	14·5	1·39	2·11	2·6	2·3	40	2·6
Willesden U.D. . .	172,503	16·0	9·8	0·86	1·40	1·9	1·3	62	2·2
Tottenham U.D. . .	153,600	18·0	10·4	0·90	1·39	1·9	1·9	54	2·2
York C.	84,630	18·9	12·4	1·26	1·41	2·0	1·8	86	1·8
Carlisle C. ..	55,160	18·8	13·5	1·02	1·34	2·2	1·7	78	2·9

Croydon.

Dr. H. P. Newsholme describes an outbreak of food-borne paratyphoid B fever, which caused the illness of about 80 persons in Croydon and district. The first case was notified on Sept. 5th, and as the patient had been for a fortnight's holiday to the seaside it was at first assumed that she had contracted the infection elsewhere. She was the head assistant of a confectioner's shop, and inquiries showed that nine out of a total staff of 15 had had similar attacks beginning between August 31st and Sept. 2nd. None of the Croydon cases ended fatally, although some had severe complications, including sharp hæmorrhage from the bowels. Exhaustive inquiries were made into the exact source of infection, and ultimately the outbreak was traced definitely to veal and ham pies and fancy cakes infected at a late stage of their preparation by a pastrycook, who had suffered from an unrecognised attack of the illness. The origin of the pastrycook's illness could not be traced, but it was within the bakery, either from infected materials or an infecting person, and it may have accounted for some earlier cases occurring in the district during July and August. No case was traced to the pastry of this firm subsequent to the withdrawal of the infecting pastrycook from work. Some of the lessons from the outbreak are : The need for better washing arrangements on such premises ; the need for scrupulous care in the cleansing of utensils ; and the need for means whereby every process involving personal handling is followed by heating of the food-stuff sufficient to prevent infection. This particular firm used bacterial virus for the extermination of rats and mice, and although it was possible to exclude this as a cause of the present outbreak, Dr. Newsholme emphasises the necessity of protecting food from this source of contamination. He further suggests that the trade might with advantage consider the adoption of some form of industrial insurance for the maintenance of employees who are obliged to leave work because they are carriers of infectious disease. The main conclusions arising out of the epidemic have been referred to the Bakery and Confectionery Section of the London Chamber of Commerce, the National Association of Master Bakers and the Croydon Master Bakers Association.

The only case of diphtheria among the staff of the hospital was that of a ward maid who had not been Schick-tested and immunised as is the custom for newly engaged members of the staff. Arrangements have been made with the Croydon General Hospital for the use of their light clinic. Thirty-eight cases of malnutrition, rickets, and other diseases were under treatment during the year, and the results were encouraging. Coöperation with the same hospital has led to the establishment of an orthopædic scheme, which includes clinics for massage, remedial exercises and electric treatment, and in-patient treatment, when necessary, at the St. Nicholas and St. Martin Orthopædic Hospital, Surrey. During 1925 there were 3406 births, and 609 expectant mothers attended the antenatal clinic. A course of six lectures to midwives was delivered by Dr. J. A. Willett, of the City of London Maternity Hospital. Of the eight cases of puerperal sepsis notified six proved fatal. There were 22 cases of ophthalmia neonatorum, in three of which vision was impaired.

In spite of increasing activity in private and public enterprise, there is much leeway to be made up in housing. Over 5 per cent. of 3492 working-class houses inspected were found to be overcrowded. The standard adopted was that of the local by-laws for houses let in lodgings—viz., 360 cubic feet in bedrooms for each person over ten and 400 cubic feet where a room is used both as living and sleeping room, with 250 cubic feet for persons under ten. The municipal lodging-house has 101 cubicles for lodgers. The charge per night is 9*d.* and the nightly average of lodgers was 99. The receipts for the year were £1346 and the expenditure £1485. Of 94 samples of milk examined for tubercle one was found to be infected, and as a result one aged cow was found in a borough cowshed with a tuberculous udder. It was subsequently slaughtered and compensation at one quarter of the value (£7) was paid under the new Act. Of 99 samples of ordinary milk examined for bacteria, 87 conformed to the Grade A standard, but a large proportion had been subjected to commercial pasteurisation.

A five years' survey of the school work shows great progress. Thus the percentage of verminous children, 13·2 in 1921, has come steadily down to 8·0 in 1925, and the children treated for dental trouble numbered 1210 in 1921 and 3357 in 1925. The work will be greatly facilitated by the opening of "admirable clinic premises" in 1926. Dr. Newsholme points out that it is difficult to gauge the changes in physical fitness resulting from school medical work owing to differences in standard due to changes in the medical staff. He is able, however, for two schools, to give a comparison of average heights and weights in 1905 (when Dr. Meredith Richards was school medical officer

and in 1925. The comparison shows a clear general increase both in height and weight among boys and girls at all age-periods in these schools.

Hastings.

Dr. G. R. Bruce reports that the most important recent event has been the opening of the new venereal disease clinic in January, 1924. This building has been designed on model lines, is entirely adequate for its purpose, and has been visited by many officers of other authorities. The water-supply is insufficient for the increasing needs of the community and the Council is looking to the chalk area in the Cradle valley to the east of Eastbourne to provide a satisfactory supply sufficient for many generations. Dr. Bruce points out that many elderly or retired persons and invalids come to live in Hastings and help to swell the death-rate from cancer and circulatory and respiratory diseases. When the correction factor (0·718) is used the death-rate of 14·5 becomes 10·4. Antenatal work is as yet only carried out on a small scale. There were 783 births, and 72 expectant mothers attended the two antenatal clinics. The municipal cases admitted to Fern Bank maternity home numbered 35, attendance at one of the antenatal clinics being a condition of admission. An orthopædic scheme in connexion with the Royal East Sussex Hospital was under consideration during the year.

Willesden.

Dr. George F. Buchan reports that there were 37 notifications of ophthalmia neonatorum—a case rate of 13·4 per 1000 births. Private doctors attended in 16 cases, midwives in 17, whilst the remaining four were born in hospital. In one patient one eye was permanently injured and two cases were under treatment at the end of the year. Proceedings were taken against a doctor and a midwife for failure to notify. The case against the doctor was dismissed, but the midwife was fined £20 and subsequently struck off the roll. At two of the three schools for mothers the work is hampered by the unsuitability of the premises, but a large number of health talks and demonstrations were given throughout the year. No general orthopædic scheme has yet been adopted, but instruments are provided in necessitous cases and crippled children are sent to outside institutions. The school premises for the physically defective at Furness-road are unsatisfactory as there is no playground available for open-air classes for the crippled children. The classes for stammering children are being extended. The medical staff of the department are taking part in the inquiries into defective vision and anthropometry instituted by the Board of Education. Dr. Buchan complains of the cumbersome procedure, in the existing state of the law, which is necessary in order to secure a reasonable standard of repair of dwelling-houses.

Many interesting matters are dealt with in appendices to the report. Appendix H. deals with mentally defective children and dull and backward children. Dr. Buchan draws attention to the fact that the definition of the mentally defective child in the Education Act of 1921 differs from that given in the Mental Deficiency Act of 1913. He thinks that "mental defect" in the Education Act may mean an educational disability only and that there is, therefore, no power to send a child to a special school unless it can be certified under the Mental Deficiency Act of 1913. Correspondence with the Board of Education is given, which shows that the Board differs from this view, but as yet there has been no decision on the matter by the courts. The question arose owing to the refusal of a parent to allow his child to be sent to the Leinster-road mentally defectives' school. Dr. Buchan also points out that 40 per cent. of the children at this school are educationally retarded and that 60 per cent. are mentally defective within the meaning of the Mental Deficiency Act. The 40 per cent. could be transferred to classes for dull and backward children if such were available, and it is suggested that such classes should serve groups of schools and should be established at suitable centres throughout Willesden. In another appendix it is shown that the Pound Lane site, on which there is a proposal to establish an open-air school, is not large enough to provide for the needs of Willesden. The proposed site of two acres would be large enough to accommodate the 100 children at present attending the physically defective schools, but it is shown that there are about 600 children in Willesden who need this provision.

Another appendix deals with the school dental scheme of October, 1924, under which a fee of 2*s.* 6*d.* was to be charged to the parents for the re-treatment of routine cases. A table is given which shows that during a year's operation there were 13,482 routine inspections, and the number of children found to require treatment was 9431. Of these only 898 received treatment at the clinics; about 100 were treated elsewhere. Dental treatment at the Willesden schools is chiefly given to the most neglected and difficult type of case, and is largely of a palliative nature instead of being preventive and constructive in accordance with the principles laid down by the Ministry of Health. A revised scheme was adopted by the Education Committee in February, 1926. Dr. Buchan points out that an addition of one dentist to the staff should be made during 1927 and other increases in succeeding years as required. An appendix by Dr. H. Haldin-Davis, dermatologist to the council, deals with light treatment, which was established in November, 1925. Some improvement was noted even in the six and a half weeks before the end of the year and striking results were obtained in severe cases of asthma and alopecia areata. The type of lamp used is a flaming carbon arc of Siebe and Gorman working at 30 amperes. Dr. Bessie R. Mackenzie gives a history of health visiting in Willesden. During 1902, the year preceding the appointment of the first health visitor, the infant mortality-rate was 130. There are now 20 health visitors and the infant mortality-rates for the last four years were: 59, 53, 73, and 62. During the last six years the number of infants breast-fed for nine months has gone up from 15 per cent. to 19 per cent., while the number solely bottle-fed from birth has gone down from 6 per cent. to 4 per cent. In a further appendix Dr. W. D. Champneys reviews the present position of work against cancer, and expresses the opinion that by far the most important measure for securing the early diagnosis and treatment of cancer—and one that has not been so far tried in this country—is the cancer clinic for free diagnosis. Such a clinic, he considers, should be established by the council.

Tottenham.

Dr. David C. Kirkhope says that many houses contain two or more families, and occasionally a family in a single room, notwithstanding that they are both able and willing to pay for more commodious dwellings. There are 2800 families upon the register of those who seek houses upon the council's estate. Tottenham has no land available unless the houses are of the large tenement type, which system Dr. Kirkhope does not recommend. Adequate means of transit from Tottenham to the metropolis are not available. The solution of the housing difficulty appears to lie in the extension and enlargement of the underground system. The pollution of the River Lea below Tottenham lock has received the consideration of the council on several occasions, and it is now hoped that the authorities concerned with the river will take action. Dr. Kirkhope goes on to complain of the nuisance caused by the tipping of refuse, both by his own and neighbouring authorities.

There were 17 notifications of encephalitis lethargica with eight deaths. The home treatment of scarlet fever is encouraged in Tottenham and the use of scarlet fever antitoxin for the inoculation of susceptible contacts has been tried with partial success. The

immunity conferred by the intramuscular injection of 5 c.cm. of concentrated serum only seems to last for about a fortnight. In two cases mothers who declined inoculation contracted the disease, and rendered the attempt at immunisation useless. A better result was obtained in the case of a school in which there were recurring cases of scarlet fever which ceased after the immunisation of half of the scholars with the consent of their parents. Grade A (tuberculin tested) milk is now supplied to mothers and children through the centres and to the creche. There were 338 new cases at the antenatal clinic, the total births numbering 2756. The scheme for dealing with school-children who need operative treatment for tonsils and adenoids has given entire satisfaction. A contract has been made with the North Middlesex Hospital. The tonsils are enucleated under an anæsthetic in the forenoon. Later in the day the children are taken home in an ambulance in the custody of a nurse. If there is any apprehension of after trouble they are retained in hospital for a longer period. Good results are also being obtained by ionisation at the clinic for otorrhœa, which was started two years ago and is under the charge of Dr. A. R. Friel. There is still a large percentage of refusals by parents of dental treatment for the children.

York.

Dr. P. R. McNaught reports that the corporation during the last five years have built 367 houses at their Tang Hall estate, and that 312 houses were in course of erection at the end of 1925. Nevertheless, there are 1400 applicants on the waiting-list for houses and developments in the confectionery trade and the erection of a sugar-beet factory just outside the city will increase the demand. Many distressing cases of overcrowding are cited. An antenatal clinic is conducted by the Infants' Welfare Association and was attended by 113 women during the year. There were also 129 attendances at the antenatal clinic of the maternity hospital, at which 271 mothers were confined during the year. The neonatal mortality was high (43) and just half the total infant mortality. Forty-six samples of milk were submitted to bacterial examination and 19 were reported to be dirty and unfit for consumption. Six of the 19 were samples of the milk produced at the municipal sanatorium. Two of the 36 samples contained tubercle bacilli.

Carlisle.

Dr. Joseph Beard reports that three out of 26 samples of milk were found to contain tubercle bacilli. As a result four milch cows were eliminated from the herds. It is difficult to estimate the real shortage of houses. Dr. Beard puts it at 1000. An inspection of the Currock estate of the corporation during the year showed that 50 out of 222 tenants were subletting. Seven of the houses were found to be seriously overcrowded and a number of others were dirty. The shortage of houses has been aggravated by the falling off of building by private enterprise since 1907 and the demolition of many tenements in carrying out reconstruction schemes. The only institutional provision for tuberculosis is 20 beds at Blencathra Sanatorium. These are intended for early cases, but advanced cases are also admitted for short courses of instructional treatment, and some cases of surgical tuberculosis are transferred to Blencathra from the Cumberland Infirmary. There were 166 new cases at the antenatal clinic, the total births in the city being 1045; the neonatal mortality-rate was 37, nearly half that for infant mortality. The city council have employed a veterinary surgeon to inspect cows for the last 27 years, whose practice it is to examine all the new cows in the city within three days of their purchase. During 1925, 146 cows were so examined and 14 were returned to the would-be vendors for various reasons. The city is exceptional in having a satisfactory public abattoir.

SCHOOL MEDICAL SERVICE.

Name of district.	No. on roll.	Av. elem. school attendance.	No. of routine children examined.	No. of special examinations and re-inspections.	Percentage of children found on routine examination requiring treatment.*
Edmonton ..	10,447	9,605	3,294	15,292	31·0
Cambridge ..	7,232	6,260	2,246	2,358	5·7
Colchester ..	—†	5,863	1,818	3,129	24·0

* Excluding uncleanliness and dental defects.
† Not given.

Edmonton.

In Edmonton there is close coördination between the child welfare work and the school medical service, for the dental clinic serves both infants and school-children as does the orthopædic clinic for massage and muscle re-education, and Dr. H. W. Harding, the school medical officer, is on the committee for the local crèche. There is, however, no definite link with the Juvenile Employment Committee nor with the factory surgeon, and the local work of the guardians, the County Council, the Home Office, and the general hospitals is unrelated to that of the local education authority. The large variation from previous years in the numbers of defects found during 1925 is accounted for by the different standards adopted by the new medical inspector, Dr. Marjorie Dalby; thus, there were 280 cases of functional heart conditions and anæmia noted as against 39 for 1924, and enlarged tonsils were noted in 610 cases compared with 173 in 1924. There is no open-air school. Dinners to the number of 52,466 were given to school-children during the year and 1375 16 oz. bottles of cod-liver oil were provided in addition to milk meals, but it is doubtful if the end results of wholesale extra dieting compare favourably with the benefits and educational value of an open-air régime. No organiser of physical training is employed. Special classes are held for the partially blind and the partially deaf while mental defectives are educated at a special school in Enfield, but Dr. Harding believes the atmosphere of the elementary school is preferable for cripples.

Cambridge.

The apparent smallness in the incidence of defects in Cambridge is largely accounted for by the fact that all dental conditions are excluded from Dr. A. L. Laird's report to be dealt with separately by Mr. W. B. Grandison, the public dental officer. Statistical tables presented by Dr. Laird and figures supplied by Dr. A. Mabel Gurney show evidence of improved physique in both boys and girls and the percentage of children in whom no defect was found was higher in 1925 than ever before, while the proportion of children found to be clean was the highest yet recorded. There has been a marked and steady decrease in otorrhœa from 3·7 per cent. in 1911 to 0·7 per cent. in 1925, and in deafness from 5·6 per cent. in 1911 to 1·9 per cent. in 1925. Dr. Laird regrets that although the plans for the new open-air school have been approved, a site purchased, and bricks deposited ready for use, no further action is being taken for reasons of economy. Meanwhile, the temporary open-air school established in 1916 continues to do excellent work, which is further extended by the helpful activities of the Invalid Children's Aid Association which sent 46 children to the seaside during 1925. An orthopædic scheme is now working in conjunction with Addenbrooke's Hospital, which also carries out much of the general treatment required by the local authority. Much useful information is given by Mr. Grandison, whose boast it is that "there are 5000 school-children in Cambridge who now show no evidence of dental caries . . . . due principally to active dental treatment."

Colchester.

Dr. W. F. Corfield surveys the changes that have taken place in the school medical service during the past five years. Cleanliness has markedly improved as have also the conditions of clothing and boots. Malnutrition, anæmia, rickets, and spinal curvatures all show lessened incidence, but enlarged tonsils and adenoids were more prevalent in 1925. This increase, perhaps, may be more apparent than real, since special attention was focused on the results of operation in a special inquiry by Dr. R. W. Cushing. At the same time, Colchester is not alone in reporting bigger incidence of morbid throat conditions during this year. Blepharitis and conjunctivitis are less frequent owing to increased cleanliness and relief of eye-strain by glasses, but the numbers of scalp ringworm cases still keep high, though the increased facilities for X ray treatment at the Essex County Hospital should materially reduce them. Routine medical inspections were attended by 77 per cent. of parents. Special classes are held for stammerers and for cases of spinal curvature, and under the orthopædic scheme Mr. W. Howell, of Brookfield Orthopædic Hospital, Walthamstow, visits the clinic periodically. Special classes are also open for mentally defective children and for the partially blind, while open-air classes are held during the summer at most of the elementary schools.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED OCT. 30TH, 1926.

Notifications.—The following cases of infectious disease were notified during the week :—Small-pox, 131 (last week 126) ; scarlet fever, 1924 ; diphtheria, 1157 ; enteric fever, 48 ; pneumonia, 828 ; puerperal fever, 45 ; puerperal pyrexia, 114 ; cerebro-spinal fever, 10 ; acute poliomyelitis, 78 ; acute polio-encephalitis, 9 ; encephalitis lethargica, 33 ; continued fever, 1 ; dysentery, 4 ; ophthalmia neonatorum, 114. There were no cases of cholera, plague, or typhus fever notified during the week. No cases of small-pox were notified from London or the southern counties. The cases of poliomyelitis and polio-encephalitis taken together are less numerous than last week, the counties reporting more than 3 being London 15 (Deptford 2, Islington 4, Kensington 1, Lewisham 1, Paddington 1, Marylebone 1, Southwark 1, Wandsworth 4); Kent 5 (Broadstairs 4, Faversham 1); Leicester 8 (Leicester C.B. 2, the remainder scattered over five urban and rural districts) ; Warwick 5 (Birmingham 1, Leamington 2, rural districts 2).

Deaths.—In the aggregate of great towns including London, there was no death from small-pox, 1 (0) from enteric fever, 7 (1) from measles, 3 (0) from scarlet fever, 14 (4) from whooping-cough, 43 (8) from diphtheria, 124 (30) from diarrhœa and enteritis under 2 years, and 71 (15) from influenza. The figures in parentheses are those for London itself.

The Services.

ROYAL ARMY MEDICAL CORPS.

Maj. A. G. Biggam is secd. for serv. under the Foreign Office.

Maj. J. J. Magner is restd. to the estabt.

Capts. A. Jackson and J. W. C. Stubbs to be Majs.

The undermentioned Capts to be Majs. : G. D. Jameson, J. G. Ronaldson, W. D. Arthur, K. P. MacKenzie, R. R. G. Atkins, R. H. Leigh, J. H. G. Hunter, W. G. Shakespeare, O. C. Link, E. E. Holden, R. G. Martyn, R. H. Hodges, and H. W. Browne.

Capts. Sarat Chandra Basu and Pearey Lall Whig relinquish their temp. commns.

The King has approved the retirement of Col. J. H. McDonald and Lt.-Col. D. McCay.

TERRITORIAL ARMY.

Maj. C. D. Mathias, having attained the age limit, is retd. and retains his rank, with permission to wear the prescribed uniform.

Capts. E. L. Sandiland and H. T. Bates to be Majs.

Maj. George Young, late R.A.M.C., T.F., to be Capt., and relinquishes the rank of Maj.

Lt. H. V. Forster to be Capt.

J. W. Eames to be Lt.

The King has conferred the Territorial Decoration upon Majs. W. C. Gunn, R. Henry, and F. E. H. Keogh.

ROYAL AIR FORCE.

Temp. Lt. V. G. Pedley, General List (Army), Dental Surgeon, is granted a temporary commission as a Flying Officer on attachment to the R.A.F.

Flying Officer G. J. Hanly is promoted to the rank of Flight Lt.

DEATHS IN THE SERVICES.

Major Charles Louis Williams, I.M.S. (retd.), who died suddenly at Banstead, Surrey, on Oct. 31st, was a Liverpool man, and studied at Liverpool and the University of Edinburgh, where he graduated M.B., C.M. in 1886 and M.D. in 1889. He also took the diploma of M.R.C.S. Eng. in 1888, and the D.P.H. Camb. in 1896. He was Holt Scholar at University College, Liverpool, and lecturer in the Liverpool Tropical School, and served for a period as house surgeon in the Royal Infirmary, Liverpool, sometime afterwards becoming medical superintendent to the Booth Shipping Line. Entering the Indian Medical Service, he served for 17 years in India and became surgeon to the General Hospital, Madras. On the outbreak of the late war he was appointed to the Hospital for Indian Troops at the Pavilion, Brighton, and after the departure of the Indians held several important surgical posts, eventually acting as a surgeon specialist. After service in connexion with the Ministry of Pensions, Major Williams retired two years ago. He leaves a widow and three daughters.

MEDICINE AND THE LAW.

Contamination of Meat by Flies: Butcher's Successful Appeal.

A PARAGRAPH in the *Times* records a successful appeal to the Middlesex Sessions by an Acton butcher, who had been fined £2 and ordered to pay £5 5s. costs on a conviction for neglecting to guard meat against contamination by flies. The brief report states that at the hearing of the appeal butchers gave evidence that glass fronts to shop windows encouraged flies, and that open windows were better, as a through current of air kept the flies on the wing. Then follows the information that the Court found that the defendant did not take all the precautions he should have done, but that his neglect was not wilful, whereupon the Chairman (Sir Montagu Sharpe, K.C.) said that on this finding the appeal would be allowed, but without costs. This somewhat puzzling result is possibly due to a compromise between the members of the Bench. If a valid enactment requires a butcher to take certain precautions, and if he is either actually or constructively aware of his obligation and fails to discharge it, the wilfulness or innocence of his motives would seem to be immaterial, unless the by-law or other enactment is so expressed as to give a defendant the benefit of good intentions.

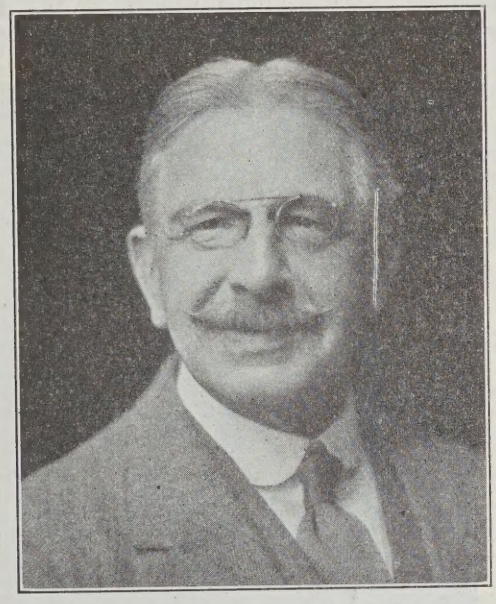
Wilfulness as an element in the commission of an offence presents well-known difficulties. Baron Bramwell, on a prosecution under a Local Act of 1774, governing the maintenance of the Aire and Calder navigation system, once held that " wilfully " throwing soil into a river meant wantonly or causelessly, and did not apply to a person acting in the course of his business and in the supposed assertion of a legal right. On the other hand, a surveyor was once held to have committed the offence of " wilfully obstructing " the highway by leaving large stones on a road under repair inadequately lighted at night. The stones were placed there purposely ; it was culpable negligence not to warn the public of the danger; therefore the obstruction was wilful. In the case of the Acton butcher, the decision of the Court perhaps means that, though he did not protect his meat as he ought to have done, he honestly thought his own method of non-protection was the best method of preventing contamination by flies. If this is to be a good defence, it is a waste of time to undertake further prosecutions of this kind. Much depends, of course, upon the exact wording of the requirement which the butcher was charged with having failed to satisfy ; but in the sphere of public health it is the facts, not the motives, which matter.

Obituary.

FRANCIS MITCHELL CAIRD, LL.D., M.B., F.R.C.S. EDIN.

Prof. Caird, of Edinburgh, who died on Nov. 1st, at the age of 73, was one of the early practitioners of antiseptic surgery. His powers as a teacher were valued highly by the University which he served, whilst the skill and knowledge he acquired brought him an international reputation.

Francis Mitchell Caird was educated at the Royal High School and at the University of Edinburgh. During his time as a student he acted as clinical dresser to Lord Lister, then Regius Professor of Clinical Surgery in the University, and learned directly from



PROF. F. M. CAIRD.

him the theory and methods which were changing surgical practice at that time. After graduating in 1877 Caird decided to take up surgery, and with this in view went on to the University of Strassburg, where he studied under Recklinghausen and Joessel, and laid the foundation of that detailed anatomical and pathological knowledge on which his work was always based. On his return to Edinburgh he continued his surgical studies, at the same time acting as demonstrator in Minto House and the Surgeons' Hall under Dr. Cossar Ewart, and became F.R.C.S. in 1880. After three years of anatomical work he was selected by Prof. Chiene as his assistant both in private work and in the teaching of large classes at the infirmary. In 1886 he was appointed assistant surgeon to the Royal Infirmary, and was made lecturer on surgery by the University and the Royal College of Surgeons of Edinburgh. During the next twenty years, in which the extra-mural school was at the height of its fame, Caird lectured regularly and with success. In 1900 he was appointed Surgeon to the Royal Infirmary in full charge of wards, and eight years later succeeded to the Regius Chair of Clinical Surgery. This he occupied until his retirement, but during the late war, although more than 60 years of age, he saw active service as consulting surgeon to the Expeditionary Force in France, where he took temporary rank as colonel.

Appreciation of Prof. Caird's services to surgery was frequently shown by academic honours. In 1901 he received the Victoria Liston Jubilee prize from the Royal College of Surgeons of Edinburgh for the greatest benefit done to practical surgery by any Fellow or Licentiate during the previous four years, and in 1912 he was elected President of the College. Of many Edinburgh societies, also, he was at one time or another president, including the Harveian Society and the Medico-Chirurgical Society, to whose proceedings he frequently contributed. In 1906 he was invited to deliver the annual address on Surgery to the Canadian Medical Association at Halifax. On his retirement in 1919 the University of Edinburgh made him LL.D.

As a surgeon Caird was notable for sound technique and painstaking carefulness. He was among the first who dared to perform abdominal operations and, later, to excise the tongue under local anæsthesia and the rectum under spinal anæsthesia. His kindness to his patients was proverbial, and he never spared himself where their welfare was concerned. His ability as a teacher, as has been mentioned, was considerable, and he was exceptionally skilful at illustrating his subject on the blackboard by means of drawings. The same talent for exposition is shown in the "Surgical Handbook" which he wrote in collaboration with Mr. C. W. Cathcart and in his other books and contributions to Edinburgh journals. Always he tried to avoid the narrow outlook, and every year he went on tour to see the main surgical centres on the Continent. Thus he came into touch with many foreign surgeons, among them counting as a personal friend Prof. Bier, of Berlin.

Caird's personality was charming. In spite of success he was a modest man, and to those needing his help he gave himself unsparingly. Before operation he inspired his patients with confidence, and afterwards gave them unceasing care, often visiting his wards in the small hours when he thought that this would increase their comfort. He was particularly interested in flowers, and was at one time President of the Botanical Society; after his retirement his chief hobby was gardening. Drawing and painting came easily to him; he was fond of music, and an omnivorous reader. In the City and University where he worked he will long be remembered for his personal, as well as his scientific attainments.

Prof. Caird leaves a widow, two daughters, and three sons, two of whom are members of the medical profession.

JAMES ERNEST LANE, F.R.C.S. ENG.,

CONSULTING SURGEON TO ST. MARY'S HOSPITAL.

WE regret to announce the death of Mr. James Ernest Lane, which occurred on Nov. 4th at the Star and Garter Home at Richmond, where he passed the last stages of a protracted illness bravely borne, following a fractured thigh.

Ernest Lane, as he was always called, was born in 1857 at 1, Grosvenor-place, the son of James R. Lane, F.R.C.S., surgeon to St. Mary's Hospital and the Lock Hospital, and the great nephew of Samuel Armstrong Lane, head of the Grosvenor-place School of Anatomy (connected in the first instance with St. George's Hospital), and one of the founders of St. Mary's Hospital, whither the school was transferred in 1854. Ernest Lane was educated at Lancing and Magdalen College School, and entered St. Mary's Hospital as a student in 1875, qualifying as M.R.C.S. in 1880, in which year he became resident medical officer of the hospital. He obtained the F.R.C.S. diploma in 1882, and was appointed demonstrator of anatomy in the medical school, holding the post until 1888, when he became lecturer on anatomy, a position which he filled during his protracted service as assistant surgeon. He became full surgeon to the hospital in 1904 and lecturer on surgery at the hospital, and was appointed consulting surgeon in 1922.

This long and close association with St. Mary's Hospital had its parallel in his connexion with the Lock Hospital, where he received his first appointment in 1878, and where for many years he filled various posts on the staff; he did notable work as surgeon in charge of the female V.D. department,

experience here being recognised by his appointment as a member of the Royal Commission on Venereal Diseases in 1913. The following extract from the minutes of the board of management dated Dec. 17th, 1925, testifies to the respect in which Lane was held by the institution:—

"That this Board, having heard the letter addressed to the Chairman from Mr. Ernest Lane resigning his position as honorary senior surgeon owing to his prolonged illness, resulting from his serious accident in November, 1923, accept the resignation with deep regret. The association of Mr. Lane's family with the hospitals dates back to 1846; his father and great-uncle having held the position of honorary surgeon before him, while Mr. Lane commenced his connexion in 1878, ultimately rising as they did to the highest post on the staff. The Board, in grateful remembrance of these long family records, desire in particular to place on their minutes an expression of their deep appreciation of the great services Mr. Lane has rendered."

Lane's connexion with the Royal College of Surgeons of England was also a long and close one. He was an examiner in elementary anatomy to the College as far back as 1891, became examiner in anatomy to the Conjoint Board in 1904, and in 1898 examiner in the same subject for the diploma of F.R.C.S. From 1907 to 1917 he was a member of the Court of Examiners of the College, he was for ten years a member of the Dental Board, and being elected to the Council in 1913 served until 1921 in that office. He also at different times acted as an examiner in surgery for commissions in the Royal Naval and Indian Medical Services.

In 1914, on the declaration of war, he first took charge as Major in the R.A.M.C.T. of the American Military Hospital at Paignton, and later was appointed to the 3rd London General Hospital, with which unit he worked until the end. Although not a prolific writer, Lane was the author of some sound articles on many aspects of venereal disease, among which may be mentioned various contributions to the Index of Treatment, and papers in THE LANCET on the general treatment of syphilis, and on the introduction of salvarsan contributed to the Transactions of the Royal Society of Medicine and to THE LANCET. He was also the editor of the 9th edition of "Heath's Practical Anatomy," and as President of the Harveian Society delivered a sound literary oration.

Lane's death deprives St. Mary's Hospital of the last direct link with its founders, and of a great representative of its work and traditions. His many posts on the staff have been enumerated; his assiduity in discharging them was exemplary, for it is on record that he lectured at 9 A.M. for four days a week during the winter sessions of 17 years and never once was late. To generations of men at St. Mary's Lane's lectures were the introduction to their work, and in their sports his figure was an equally intimate one. As a student he had been a keen athlete, a member of the football team, a winner of many events in the hospital sports, and the winner of the United Hospitals hurdles. He was president of the Hospital Students' Club, and when he presided over the annual dinner of the old students in 1910 his popularity was exemplified by an enthusiastic reception. And Lane's colleagues on the staff held him in similar esteem. He commanded respect by his absolutely straight and well-balanced attitude in matters affecting the welfare and conduct of the institution, while he was unfailingly generous and unselfish in dealing with his juniors. Many of these have had much to thank him for in the readiness with which he allowed them full opportunities for work in the beds under his charge. He was a prominent Freemason, and was one of those chiefly instrumental in founding the Sancta Maria Lodge in connexion with the hospital; for nearly 25 years he was secretary, and to him, in greatest part, the outstanding success of the Lodge is due.

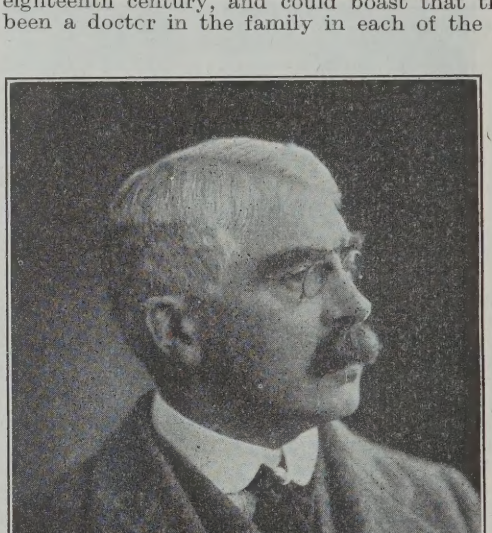
Not long after his retirement from active work at St. Mary's he sustained a serious accident, being knocked down by an omnibus in Regent-street. This left him bed-ridden, and for three years he endured his discomforts and disabilities with unfailing patience until he passed away peacefully at the Home for Disabled Officers, where he was cared for by one of his former pupils. The funeral took place at the Old Fulham Cemetery on Nov. 8th, and was attended by many of his former colleagues, his old pupils, and other personal friends.

In 1900 he married Miss Gertrude P. Woram, but leaves no family. Our deep sympathy is extended to his widow.

WILLIAM EDWARD FOTHERGILL, M.D., B.Sc. EDIN.

Prof. Fothergill has for many years been one of the most striking figures in Manchester medicine, and his sudden death at the Glasgow University dinner at Manchester on Nov. 4th will be greatly and widely regretted.

He was descended from a brother of Dr. John Fothergill, the eminent physician and botanist of the eighteenth century, and could boast that there has been a doctor in the family in each of the last six generations. He was properly proud of his Yorkshire descent, of the old family farm, Carr End, on Semmer Water off the Wensleydale Valley, and of the Quaker stock from which he arose. He was himself the son of Samuel and Emma Fothergill, of Darlington, County Durham, and was born in 1865. Entering the University of Edinburgh at the age of 17, he took degrees in Arts and Science before beginning the study of medicine. His undergraduate and early career was exceptionally brilliant in academic distinction; in practically all his examinations he obtained first-class honours; he won the Milner Fothergill Gold Medal in 1897, and he took many other prizes and medals. In 1895 he settled down to gynæcological practice in Manchester. It was not easy to make way at first among so many competitors, but success came without great delay. He secured honorary gynæcological appointments first at the Northern Hospital (1899), later at the Southern Hospital (1904), and, on the amalgamation with this, on the St. Mary's Hospitals of Manchester in 1905. In 1908 he was appointed assistant gynæcological surgeon to the Manchester Royal Infirmary, and in 1919, on the retirement of Prof. Archibald Donald, went on to the senior post. At the University in Manchester he became lecturer in 1901,



[*Lafayette.*

PROF. W. E. FOTHERGILL.

professor of obstetrics and gynæcology in 1920, and professor of clinical obstetrics and gynæcology in 1925. An interesting break in his purely gynæcological studies was afforded by his work as Director of the Clinical Laboratory at the Manchester Royal Infirmary from 1899 to 1905. The laboratory was then a new institution, and Fothergill was invited to take the post, as it was felt that his energy could make it a success where others might fail. Whilst holding this post he introduced radiological work to Manchester.

An enthusiastic teacher, with pithy, forceful sayings, he had strong views as to how gynæcology should be taught. Throughout all his teaching he pressed for a pathological or scientific classification of the subject as opposed to the haphazard description of diseases used in many text-books. This would save, he said, much space because it would remove the temptation to describe, as diseases, conditions which had no separate clinical existence; and something would be gained, also, by using a system with which students had become familiar from the beginning of their pathological work. These views he set out in the *Journal of Obstetrics and Gynæcology of the British Empire* of March, 1912, and all his books bear evidence of his orderly mind. He was a voluminous writer, and must have produced about a hundred papers in various journals, apart from larger works, which ran into many editions. While a successful operator in all fields of gynæcology, his especial interest lay in the development of the operation of colporrhaphy, which is associated with St. Mary's Hospitals (Manchester), and in which he took a leading part. Many surgeons from all parts of the world came to see his technique in this operation.

Fothergill was a good friend, an outspoken, fearless, critic of people and institutions. The severity of his criticism occasionally made him a difficult opponent of those who did not agree with his views. He was a brilliant raconteur, and was much sought after as a dinner speaker. His obituary notice of Lloyd Roberts in THE LANCET (1920, ii., 766) is a pleasing example of humour, portraiture, and good taste. He showed great interest in all the students did at the University, both at work and play, and was a regular attendant at the University Athletic Ground. Perhaps his happiest moments were when, after some University function or after a dinner, he collected a party of young students at his house, and round the fire told his tales and discussed the medical topics of the hour. On the day before he died he had cheerfully looked forward to continuing his hospital work for years to come.

Prof. Fothergill married in 1895 Edith, daughter of the late J. Dillon Woon, of Chelsea. She died some years ago.

MARY AELFREDA ST. CLAIR SWANN, M.B. LOND.

WE have already recorded the death, on Oct. 25th, of Dr. Mary Swann at the early age of 27. On leaving Cheltenham School in 1918 Miss Swann entered the medical school of the Royal Free Hospital. As a student she always appeared keenly interested in her work and anxious to make the most of her opportunities. At the same time she had many interests in the outside world, and knew an exceptionally large number of people. After graduating M.B. Lond. in 1924 she became a clinical assistant at the Royal Free Hospital and would have gone on to a house appointment but for a breakdown in health, which cut short her work over a year ago. A medical friend describes her as a physician of great promise whose loss "is mourned by a wide circle both of students and staff amongst whom she had many friends and was held in high esteem both for her intellectual and for her personal gifts. She was a physician who exercised the full force of her personality in her handling of patients and had the rare possession of a discriminating and tempered sympathy added to a sound basis of medical knowledge which augured well for her success. Had she been spared she would worthily and with distinction have upheld the traditions of her hospital."

Miss Swann was the sister of Dr. M. B. R. Swann, Fellow of Caius College, Cambridge, who died early this year.

FRANCIS WARNER, M.D., F.R.C.P. LOND., F.R.C.S. ENG.,

CONSULTING PHYSICIAN TO THE LONDON HOSPITAL.

Francis Warner, whose death has been recently chronicled, must be regretted by all, for he was a pioneer in branches of medicine with which his name will always be associated. He was the son of James Neatby Warner, and was born in 1847. As a boy he was educated at home, but at the age of 20 he won a junior scholarship at King's College, London, and embarked on a successful career as an undergraduate. Qualifying in 1870, he became house physician at King's College Hospital, and when, some four years later, after taking the M.D. Lond. and F.R.C.S. Eng., he was appointed to a children's hospital, his attention was soon turned towards that study of mental and nervous conditions which afterwards chiefly interested him. Noticing the frequency of headaches, insomnia, and defects in adaptation to school life, he began to build up a system of routine examination to serve as a guide to accurate prognosis and treatment. At that time medical literature did not give detailed descriptions of the signs of mental disease such as were available in the examination of pulmonary or cardiac conditions, and Dr. Warner set himself to supply the need for them. His investigations were made easier by appointment in 1876 as medical registrar to the London Hospital, and later as assistant physician to the East London Hospital for Children, to both of which institutions he eventually became physician. In 1883 his unusual knowledge was recognised by his election to the Fellowship of the Royal College of Physicians, a body which he later served as examiner, acting in the same capacity at several of the Universities.

The guiding principle of Dr. Warner's research was that the state and functions of the brain could be interpreted by the muscular movements to which they gave rise. In 1888 he read a paper before the Royal Society in which he discussed the significance of the spontaneous movements of infants at birth and up to the period of mental display, and showed their analogy to cell action in lower organisms. This was pioneer work in mental physiology, and Dr. Warner's hypothesis of a physical or neural response to mental action has been valuable in developing the diagnosis and treatment of mental disorders and deficiency. An immense amount of labour was devoted to the measurement and graphic record of expressive movements, and apparatus was devised for the analysis of their components. A Hunterian lecture to the Royal College of Surgeons in 1887 contains some account of his views on the action of nerve centres. His work, however, was practical as well as academic, and he was especially interested in the effects of environment on mental processes, and in the hereditary capabilities and limitations of children from the eugenic standpoint. Painstaking observations led him to enumerate 63 signs of defect in bodily development, and these he took as a basis for classifying children. In 1888, with the assistance of the British Medical Association and other bodies, he began a seven years' investigation into the physical and mental condition of 100,000 school-children in London. Dr. Warner examined these children individually, recording in each case any of the 63 signs which he had set himself to look for. A report on 50,000 of them was published in 1890 by the United States Government, and a full report was later published by the British Medical Association with recommendations on education and training, some of which, dealing with defective children, have since been carried out. From this time Dr. Warner was naturally recognised as an authority on the development and mental physiology of the child, and was frequently called upon to give evidence before

departmental committees and Royal Commissions, including the one which, in 1889, inquired into the condition of blind, deaf, and defective children and led to the School Board for London being empowered to provide special schools. His opinions were also frequently in request by the Local Government Board, the Home Office, and the Education Department. Numerous addresses and lectures, including the Milroy lectures of 1892, were delivered before medical, educational, and other bodies, and a number of books, including the "Study of Children" and the "Nervous System of the Child," added to his considerable influence on current teaching and his recognition as an able investigator.

In 1913 Dr. Warner resigned from the staff of the London Hospital and became consulting physician. In the following year, however, he gave a course of lectures at the hospital on neuroses and psychoses, and during the late war he generously offered his services to the hospital, and actually remained in residence there for three and a half years, working daily. In 1921 his national services were recognised by the grant of a pension on the Civil List.

Dr. Warner married in 1880 Louisa Loder, daughter of William Howard, of Hampstead. He leaves a daughter and a son, who is a member of the medical profession.

RICHARD NORRIS WOLFENDEN, M.D. CAMB., F.C.S., F.Z.S., F.L.S.

THE death is reported from his home at Grimsby, Ontario, of Dr. R. N. Wolfenden, to whom a debt is owed by laryngologists and zoologists alike. He was born at Bolton, Lancashire, in 1854, and after studying at Owens College and Christ's College, Cambridge, qualified in 1880 from the London Hospital, where he served on the house staff before becoming lecturer on physiology to Charing Cross Hospital Medical School, and obtaining an appointment at the Throat Hospital in Golden Square. At this time he did some work on the action of X rays on bacterial growth. His interest in laryngology was stimulated by association with Sir Morell Mackenzie, whom he accompanied to Berlin, and with whom he jointly founded the *Journal of Laryngology and Rhinology*. His own contributions included papers on neuroses of the throat and nasal passages, studies of laryngeal neoplasms, and of the control of respiration in singing. He took part in the German expedition to the Antarctic and the cruise of the *Silver Belle*, which led him to study the remarkable group of deep-sea crustacea known as copepods, on which he wrote a standard book. He joined the British Marine Biological Association, becoming a member of its governing body. His later work included studies of the plankton of the North Atlantic and of the nature and action of snake venom. Most of this work was done from Seaford, where he went to live after giving up appointments in London, which included that of consulting physician to the Pearl Assurance Company. A few years ago he retired to Canada.

THE LATE DR. R. H. LUCAS.—At the age of 81, Dr. Robert Harry Lucas has died at Bury St. Edmunds. He was the third son of Dr. Thomas Lucas, of Burwell, in Cambridgeshire, and qualified as M.R.C.S. Eng. in 1869. After a term as house surgeon at the Middlesex Hospital he was appointed resident medical officer and held this post until in 1879 he settled in Bury, where he soon developed a large practice. As surgeon to the West Suffolk Hospital for many years he had a large share in building up the surgical department of that institution, and it is recalled that in 1893 he was sent for to advise King Edward (then Prince of Wales), who was staying at Newmarket. Dr. Lucas retired from the hospital staff in 1909, being made consulting surgeon. He was attached for many years to the Loyal Suffolk Hussars (Yeomanry) as surgeon-captain, and during the late war worked at the Military Hospital of the Suffolk Regiment's Depôt. He was also a magistrate for the county. Until about six months ago he enjoyed good health. Dr. Lucas married in 1884 the daughter of Mr. Ambrose Smith, of Walford, who survives him with one son, Dr. H. A. Lucas, who is clinical pathologist to King's College Hospital.

Correspondence.

"Audi alteram partem."

EPIDEMIC ENCEPHALITIS IN DOGS.

To the Editor of THE LANCET.

SIR,—Mr. Pugh in his very valuable contribution in THE LANCET of Nov. 6th under the above title wishes to impale upon the horns of a dilemma the supporters of the conception of epidemic encephalitis as a specific and individual disease. In effect, he says that either the human and the canine diseases are identical—i.e., caused by the same virus—or else they are mere symptoms of some other infection—namely, influenza and distemper respectively.

In my view there is no such dilemma. There is another possibility—namely, predisposition of a sufferer from one infection to another. Many instances can be adduced; scarlet fever and diphtheria, malaria and dysentery, measles, whooping-cough, leprosy, possibly erythema nodosum, and tuberculosis. Influenza notoriously renders the sufferer susceptible to secondary invaders and, as Mr. Pugh states in his last paragraph, the *Bacillus bronchisepticus* is probably only a secondary invader in distemper.

On the other hand, there is the frequent occurrence of labial herpes in pneumonia and other respiratory infections. Believed to be a mere symptom, it is now recognised as a secondary infection due to a virus closely allied to that of encephalitis and capable of setting up encephalitis in the rabbit. Those who believe that influenza and human epidemic encephalitis are due to one and the same virus must produce epidemiological or bacteriological evidence in support of their view. My own experience, a field investigation of about 500 cases of epidemic encephalitis in Liverpool, is entirely against such a belief. It has shown:—

(*a*) That in seven years the outbreaks of influenza and encephalitis have never coincided; neither do they regularly alternate. The reference is to the dates of onset of encephalitis.

(*b*) That it is quite uncommon for a genuine attack of influenza, accompanied by symptoms affecting the lower respiratory tract, to precede the onset of encephalitis; where encephalitis has apparently followed an attack of supposed "influenza," this latter has in the majority of cases been admittedly the febrile onset of encephalitis.

(*c*) The entire absence of any case of epidemic encephalitis occurring in a family affected with an outbreak of influenza of the ordinary respiratory type.

(*d*) On the contrary, the occurrence of two or more cases of encephalitis of characteristic type in one family is a not infrequent event. I have seen three children affected quite typically—one developed characteristic sequelæ—the onset having been preceded by a relapse of the mother who had suffered a similar attack three years previously. Making allowance for the varied symptomatology of epidemic encephalitis it breeds true.

(*e*) On the other hand, during the climax of an influenzal wave, there is sometimes a small increase in the number of cases of epidemic encephalitis; this may be accounted for by influenza predisposing to encephalitis; the manner of this predisposition has been suggested by Yates [1]—namely, that morbid conditions of the nasal sinuses permit infection with the encephalitic virus.

There is one striking omission from Mr. Pugh's contribution. Did any cases of typical "bronchisepticus" character occur simultaneously and in close association with the cases of the epidemic which he describes? Or does he base his diagnosis of distemper on the accepted belief among veterinary practitioners that "the nervous aspect of distemper is merely one form of reaction among several to which the virus of distemper may give rise"? Has this belief received experimental verification? It would also be of interest to know whether there was evidence of case to case infection, and also the age incidence of the disease. The similarity of the symptoms of the canine epidemic at Sevenoaks to the human encephalitis is most marked. Whilst the viruses may be only allied and not identical this similarity does

[1] The Condition of the Accessory Sinuses in Encephalitis Lethargica, Proc. Roy. Soc. Med., xl., 10, 646 (October, 1925).

suggest the propriety of endeavouring to infect dogs with the human virus, if this has not been adequately tested.

I would add that I welcome Mr. Pugh's paper and consider that there is much to be gained from the joint discussion by veterinarians and medical men of allied problems in epidemiology.

I am, Sir, yours faithfully,

C. O. STALLYBRASS, M.D., D.P.H.

Liverpool, Nov. 6th, 1926.

PARAFFIN IN PLASTIC SURGERY OF THE NOSE.

To the Editor of THE LANCET.

SIR,—In your issue of March 27th you were good enough to review my book, "Plastic Surgery of the Nose," in terms very gratifying to an author pardonably interested in the reception of his first work. I trust you will not hold me in any way lacking in the appreciation due for this courtesy if I find myself in active disagreement with your reviewer concerning one of his expressions of individual opinion in which he traverses the position I took up in regard to the use of paraffin in naso-facial repair. My view is that the use of paraffin should be condemned. His view is that "the common small depression at the nasal bridge is best corrected by the injection of a small quantity of paraffin wax," and that "the result is quite permanent."

The question is: When may the result be pronounced "quite permanent"? Practically all cases demanding surgical interference to get rid of the injurious effects of injected paraffin had gone for several years before there was occasion to doubt the permanence of the repair, and most of them for several years more before the condition became so menacing that it was no longer possible to defer consultation for relief. That is the characteristic of injected paraffin; there may be "permanence" for ten years and then paraffinoma in the eleventh or twelfth.

The injuries produced are peculiar to the material. The tissues are intolerant of any foreign body inserted among them, and there is persistent effort directed towards its expulsion. With most of them the expulsion is early and violent. With paraffin it is slower, but not less certain. There is a tendency for the particles to disseminate even without pressure, this being due to the nature of the substance; but where, as in the case mentioned, the material is employed to give a support, pressure is inevitable, and the process of dissemination, with its sequence of infiltration and inflammation, is hastened. When it is known beyond peradventure that these things do happen, how can anyone possibly proceed upon the assumption that in a given instance they will not?

For those who believed, and those who still believe, in the efficacy of paraffin, the nose has always been a favourite field. That is why the majority of cases calling for relief are nose cases. Anyone who sees a few of them will want no more to do with paraffin for any correction. It may be encapsulated and tumescent, or it may travel into the tissues of the cheek, lip, philtrum, ala, tip or columella, and wherever it is or has been there are tumours, varying in kind and degree. The only recourse is complete extirpation, something not always possible. It does happen that there is hardly enough healthy tissue left upon which to base a repair. This, surely, is a sufficient deterrent against its use, without going into the case-histories of a more startling nature, with their record of blindness, of embolism, and of malignancy. Nor is there much consolation from reflecting that in many cases the material was injected in the belief that the repair was the best and would be permanent.

Moreover, in the case cited, there is no need to resort to the use of paraffin, for if correction cannot be effected by a readjustment of the tissues themselves, it can be nicely and easily done by transferring a small bit of ear cartilage.

I am, Sir, yours faithfully,

New York, Oct. 28th, 1926. J. EASTMAN-SHEEHAN.

ASHAMED TO BEG.

To the Editor of THE LANCET.

SIR,—I also have had occasion to see consultants on my own behalf and that of members of my family and have had the same difficulties. Consultants—and they have unfortunately been many—have one and all been indefatigable in their kindness and generous of their skill but, though I am engaged wholly in laboratory work and almost divorced from patients, they all refuse fees. I recently asked a medical colleague to tell me what he would regard as a reasonable fee for one in my financial position for what he had done for me, and allow me to send a cheque to either Epsom College or the Royal Medical Benevolent Fund. We both welcomed it as a happy way out.

I am, Sir, yours faithfully,

Nov. 8th, 1926. MEDICO II.

To the Editor of THE LANCET.

SIR,—Your correspondent who describes himself in the issue of Nov. 6th as "ashamed to beg," has created for himself an entirely imaginary difficulty. He need not, as he puts it, "hesitate" to ask the help of any colleague, consultant, specialist or other. One is only proud that one's services or advice are sought, and happy that one can place them at the disposal of a colleague. His fear that a present will not be valued, or that the consultant will not be pleased, is morbid, and he should recognise it as such. At least a third of the men on the Register are in the same position, unable to send private cases to consultants. If the matter of a fee is really felt, a plan I have found acceptable might help. In such cases, where a fee is pressed, I ask the patient to become a subscriber to the Royal Medical Benevolent Fund, or to increase his subscription if he is one already. This avoids any question of indebtedness; I have accepted the fee, but on behalf of other and even less fortunate colleagues, and in the knowledge that the debt the patient feels he owes to his professional brethren he is paying to his professional brethren.

I am, Sir, yours faithfully,

Nov. 8th, 1926. CH.M.

To the Editor of THE LANCET.

SIR,—In reply to Medico's letter "Ashamed to Beg," our friend overlooks the broader and truer aspect.

All "consultants and specialists" have had help given them in their hours of need by their colleagues. As they are unable to repay the aid individually, they welcome the opportunity of helping the profession in general. This assistance is their only means of expressing their deep sense of gratitude.

I am, Sir, yours faithfully,

G. LENTHAL CHEATLE.

Harley-street, W., Nov. 9th, 1926.

HALOGEN ERUPTIONS WITH LESIONS ON THE TONGUE.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Nov. 6th (p. 952) Prof. A. J. Hall records the case of a nephritic young woman, who, as a result of taking potassium iodide (only 12 gr. in all) developed a severe iodide eruption, one of the lesions being situated on the tongue. About three weeks later she developed pericarditis and died. He writes: "This occurrence of a lesion on the tongue, similar to those on the face, has, so far as I am aware, not been previously observed." In my paper on the Mycotic Type of Bromodermia and Iododermia in the *British Journal of Dermatology and Syphilis* (1923, xxxv., 169–180) Case 5 was that of a girl, aged 14 years, with granulomatous nodules on the tongue as well as lesions on the face and one leg, apparently due to iodides that she had been taking. In the hospital there was bronchitis, with evidence of nephritis, and pyrexia. She died and the necropsy showed (not very old) pericardial adhesion, much bronchitis, and "large white kidneys." She had

formerly had scarlet fever. The appearance of the tongue and face is illustrated by Fig. 4 of my paper. I knew of œdema of the tongue and glottis due to iodides, but not of any other case of iododermia in which the tongue showed lesions similar to those on the skin. After publishing the paper, however, I received a kind letter from a doctor including notes of a case of iododermia, with involvement of the tongue; the patient died with glottis œdema and broncho-pneumonia, but no mention of nephritis was made. Another doctor told me he had seen "variola-like" iodide eruptions in nephritic cases, including one case in which the tongue was involved. A third doctor wrote to me of a case of chronic nephritis in which a dose of potassium iodide was given to test the renal function. This was followed by the appearance of a granulomatous eruption on the face, tongue, hands, and other parts, with acute œdema of the eyelids and pyrexia. Pneumonic consolidation of the lungs and death followed. A fourth doctor told me of a man aged about 40 years, who was treated for rheumatoid troubles with moderate doses of potassium iodide. He developed a severe iodide eruption, together with ulcers on the tongue, and died with glottis œdema. That patient was not known to have renal disease. On the whole it seems to me most probable that renal disease, when present, has played an important rôle in such cases. In the two cases in which renal disease was not found or not mentioned, no post-mortem examination was, I believe, made.

A point in regard to the "mycotic" or "granulomatous" type of halogen eruptions—not alluded to by Prof. Hall or Dr. H. C. Semon (THE LANCET, Oct. 16th, p. 803)—is that in some cases (mostly before the days of the Wassermann reaction) the eruption has been regarded as possibly syphilitic and suitable for further iodide treatment.

I am, Sir, yours faithfully,

London, W., Nov. 8th, 1926. F. PARKES WEBER.

THE TREATMENT OF FLOUR.

To the Editor of THE LANCET.

SIR,—Various medical readers of THE LANCET have called my attention to the annotation on p. 718 of your issue of Oct. 2nd entitled the Adulteration of Food, which consists essentially of portions of a report by Mr. G. D. Elsdon, borough analyst to the Salford Health Committee. In the matter of flour, I do not accept the accuracy of the allegations contained therein, and it has been urged on me as a public duty that I should state plainly where in my view they are incorrect. I am somewhat in difficulty because the Government has referred the whole of the subject to a Departmental Committee which has investigated it most thoroughly. The manufacturers of substances used for flour treatment have laid their case in full before the Committee, so in fact have the millers, and evidence has also been given by bakers.

This Committee has not yet issued its report, and, consequently, the matter is still sub judice. In these circumstances I am precluded from dealing with Mr. Elsdon's statements in detail. I may, however, be permitted to say that Mr. Elsdon's suggestion, that in no other civilised country but England is flour treatment permitted, is not in accordance with facts. It is within the writer's personal knowledge that in Europe such flour treatment is successfully carried out in Germany, Holland, and several other countries. In America the same is done in the Argentine and the United States.

Although financially interested in certain processes of flour treatment, I venture to assure you that taking, for example, the form of such treatment which Mr. Elsdon apparently most reprobates—viz., that with persulphates—the fact is that it does not result in any detriment to the public, and that as a consequence the people are supplied with a pure loaf of better flavour and greater digestibility and consequently higher nutritive value.

I am, Sir, yours faithfully,

Hove, Sussex, Nov. 9th, 1926. WILLIAM JAGO.

*** The Minister of Health stated in Parliament on Nov. 9th that a Committee, alluded to by our correspondent, has had the various questions referred to it. The report of this Committee has been long expected.—ED. L.

THE SUPPLEMENTAL CHARTER OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

WE have received several letters accusing the Council of the College of dilatory methods in that effect has not been given to the supplemental charter in time to provide for the altered status of women Fellows and Members. The matter has been referred to in the lay press, strong terms being employed, showing unfamiliarity with the facts.

The supplemental charter of the Royal College of Surgeons of England was approved by the King in Council on July 26th, but was not officially sealed till August 19th, 1926, and was received by the College on August 24th. Arrangements to carry out the provisions of charters have to be made by by-laws and regulations, and it is not possible to formulate these immediately on the grant of a charter. In this case alterations have to be made in five by-laws, and the exact terms have to be settled by counsel.

No by-law of the College can be made, altered, or abrogated without the sanction of the Crown, or has any validity until approved by the Crown. Section III. of the by-laws defines the process of making, altering, or abrogating a by-law and requires that at least three meetings of the Council must be held for such a purpose. When the by-law has been finally approved and adopted by the Council, it has to be submitted to the Home Secretary for sanction, and before the Home Secretary sanctions the by-law it has to be examined and allowed by the Lord Chancellor and the Lord Chief Justice. Every by-law of the College bears the signatures of these three principal officers of the State. All this takes time, and the process of making a new by-law is seldom accomplished in much under six months.

The charter of 1926 does not in itself give women Fellows and Members the same status as men, but it makes it lawful for the College to give them the same status. Section XXVI. of the by-laws provides that in some particulars women Fellows and Members do not have the same rights and privileges as men, and that by-law must be altered before the College can exercise the power given it under the new charter of giving women Fellows and Members the same status as men holding the like diploma.

All this elaborate official procedure may seem cumbersome or unnecessary, but changes in the laws of the land must be made with every care or the consequences lead to troubles out of comparison greater than those which follow a delay, however much resented. There is no reason to doubt that steps are being taken by the College to effect the alteration of the by-law as quickly as possible.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—The following scholarships for 1926–27 have been awarded: Entrance Science Scholars: A. G. Sanders (£150), A. Kahan (£60); Entrance Arts Scholars: L. W. Lauste, A. Kennedy; Entrance University Scholar: G. W. Pickering (£100).

FINANCES OF ST. GEORGE'S HOSPITAL.—The ordinary income of this hospital is nearly £25,000 less than the ordinary expenditure, and there is now an overdraft of that amount. The joint treasurers, Lord Greville and Lord Maidstone, appeal for help in view of the fact that this year the revenue from legacies has failed to make up the deficit.

BIOLOGICAL STANDARDISATION OF REMEDIES.

DISCUSSION AT THE SECTION OF THERAPEUTICS AND PHARMACOLOGY OF THE ROYAL SOCIETY OF MEDICINE.

AT a meeting of this Section held on Nov. 9th, with Dr. GEORGE GRAHAM, the President, in the chair, Dr. H. H. DALE opened a discussion on the Biological Standardisation of Remedies. He said that every remedy with a potent and definite action should be supplied for therapeutic use with its activity indicated in some clear and intelligible notation. Where the active constituent was determinable by chemical methods this was simple, but there was a large and growing class of important remedies to which chemical standards were not applicable. In many of them the activity could be measured by a biological method. Everybody agreed on the importance of biologic units for measuring diphtheria antitoxin, insulin, and pituitary extract, but there had been a tendency to doubt the need for and value of such testing in the case of drugs which had long been used empirically. To the experimental worker the inevitable variation of the reaction of different patients, so far from making accurate measurement of a drug's activity less important, made it the more urgently necessary. His second principle was that the word "standardisation" had no proper use except in relation to some generally accepted standard. This seemed obvious and yet no official standards of activity, biologically determined, had hitherto been available in this country. They were, however, to come into force next year. Under these circumstances the manufacturers could not be blamed because preparations of widely different activities had been issued by different firms, but the natural result had been to strengthen conservative scepticism and bring the principle of biological standardisation into unjustifiable disrepute. The League of Nations had interested itself in the promotion of international uniformity, and already standards had been agreed upon for two sera, for insulin, for pituitary extract, and for salvarsan.

The Importance of Comparative Standardisation.

Dr. Dale urged the necessity for making the basis of all biological standards comparative. As a matter of practical experience it was not possible to define a unit for the activity of a remedy in absolute terms of some animal reaction. Ehrlich established the unit for diphtheria antitoxin in terms of a definite weight of an arbitrarily-chosen standard, and this method had stood the test of time. The first suggestion of measuring potent and variable drugs like digitalis by analogous methods had come from the late Prof. Cushny. Pharmacologists, however, for many years fell into error and ran a serious risk of discrediting their methods by tending to attribute too absolute a value to the determination of a limiting value such as a lethal dose. The drugs with which they dealt were different from the diphtheria antitoxin, where the aim of the test was to find the quantity of serum which left one lethal dose of toxin free and effective, so that an error even of 100 per cent. in the measurement of the free toxin involved comparatively little error in the determination of the neutralising quantity. Moreover, the animal used was merely the indicator in a titration, whereas for a "lethal dose" test the sensitiveness of the animal was a most important factor, and the measurement could not be accurately made on a small number of animals. The International Conference in Edinburgh in 1923 had decided to test the different methods recommended for standardising digitalis. The tests from many different countries showed complete agreement so long as the results were evaluated in comparison with a standard, but when an attempt was made to define the activity of any of the given specimens in absolute units of animal reaction the widest discrepancies appeared. In the early days of insulin attempts had been made to define a unit as the quantity needed to produce hypoglycæmic convulsions in a rabbit weighing 2 kg., but it soon became clear that this quantity varied enormously with different rabbits. Other laboratories tried to fix it by determining the dose needed to produce convulsions in a given proportion of mice, but found that small changes in diet and environment made large systematic differences in the reaction. Fortunately, the Edinburgh Conference had been able to intervene and fix a standard dry preparation.

The proper notation for the expression of the activity of a substance was one which employed an arbitrary but uniform and generally accepted unit of activity. Nobody would think of prescribing diphtheria antitoxin or insulin in drachms or cubic centimetres, but unfortunately dosage by volume of pituitary extract had grown up. There was no longer any excuse for the marketing of extracts varying, even theoretically, from 5 per cent. to 20 per cent. of the gland substance; a standard was now available.

The Nature of the Standard.

All the International Conferences had accepted the principle that a standard should consist of a specimen of the therapeutic substance itself, or of its essential active constituents, in a stable form. This was the only safe principle. The attempt to introduce such substances as histamine and potassium chloride as standards for pituitary extract had failed completely. The proper standard for digitalis was digitalis and a standard international sample of this drug had recently been completed by Prof. Magnus, of Utrecht.

It might seem strange to insist that the methods of biological comparison should be such as to give reasonably accurate measurement of the therapeutic activity, yet experience had shown that it was necessary to lay this down. The expression "biological standardisation" had been used for methods which could not be applied quantitatively to the measurement of anything, and without any evidence that the crude qualitative indications they gave had any relation to the therapeutic effect. The difficulty was to make clinical measurements of activity with any degree of precision, but it was not an insurmountable one, and there was room for much careful work.

Correspondence Between Laboratory and Clinical Tests.

It had been found that guarantee of freedom from undue toxicity was insufficient for neosalvarsan preparations as it was easy to produce products with a toxicity far below the official maximum, but with a therapeutic potency also lowered. A test for potency had, therefore, to be elaborated and the speaker and his co-workers had found that an estimation of the curative activity on mice infected with trypanosomiasis corresponded accurately with the estimation of efficacy in causing the disappearance of the spirochæte from superficial syphilitic lesions in man. Similar correspondence between laboratory and clinical tests had been found with digitalis and insulin. Laboratory workers must bear in mind the need for correlating their investigations with clinical work.

Dr. J. W. TREVAN dealt with the accuracy of certain well-established tests devised for all sorts of remedies which could not be standardised by chemical methods. Tests for insulin, digitalis, ergot, adrenalin, vitamins, and the ovarian hormone had reached such a stage that a definite value could be attributed to the degree of their accuracy. On the other hand, the methods described for testing parathyroid, thyroid, cannabis indica, and other substances were not supported by sufficient evidence for quantitative work. The errors which had to be considered were very largely due to the variability of the animals or organs used for the tests. He showed a chart illustrating, in a series of 250 frogs, the way in which they differed in the quantity of strophanthus required to stop the heart in systole in 12 hours. It took at least three times as much to kill some frogs as others. A similar chart showed the percentage of convulsions produced by different doses of insulin; here the variation was

even greater. The same difficulty arose with isolated organs.

Methods of Minimising the Error Due to Individual Variations.

The best and most accurate way of avoiding this difficulty was to use some reaction which was quickly reversible, so that the effect of the drug to be tested could be produced, washed out again, and repeated with a sample of some standard preparation. For instance, the rise of blood pressure in a cat bore a simple and constant relation to the dose of adrenalin injected, and the expected error could be worked out from the curve. In the middle of the curve it was found, both theoretically and practically, to be of the order of 6 per cent. The same sort of curve was obtained with pituitary extract, but here the sensitivity of the uterus did not remain constant throughout the experiment, so that the error was between 10 per cent. and 20 per cent. of the dose given. The method was also applicable to the artificial œstrus produced in castrated female rats by ovarian hormone, but the difficulty here was that a large increase in dose was necessary to produce a distinguishable increase in the œstrus. Recently it had been found that digitalis could also be tested in this way by its action on the rabbit's auricle in Ringer solution of a hydrogen-ion concentration of 7·4 obtained with boric acid mixture. An excessive dose produced a toxic effect which greatly increased the difficulty of washing out. Not all drugs, however, could be tested by a reversible reaction, and for some of these Clark's method for ergot was useful. Here two strips of uterine muscle were removed, as close together as possible, and tested in separate baths at the same time. A third way was to increase the number of tests, as, for instance, had been done with the action of digitalis on frogs and cats and of insulin on mice, and to some extent on rabbits. In the speaker's opinion the term "minimal lethal dose" had no fixed meaning and should be dropped in favour of the "average convulsive—or lethal—dose"—i.e., that obtained at about the middle of the range. Unfortunately, this varied from time to time, and might be twice as much on one day as on another, as animals showed periodic variations in sensitivity. Therefore, until a worker had demonstrated satisfactorily, through a very large series of experiments, that any given lethal dose method did not suffer from this "shift" in the average lethal dose, he must always assume that it might do so, and whenever he tested an unknown substance he must at the same time inject an equal number of animals with a standard preparation for comparison. This meant many experiments and many animals. It had appeared that certain antimonial preparations did not suffer from "shift," and possibly salvarsan was also free. The method of determining the error in a lethal dose experiment was complicated, but the expected and calculated errors had been found to correspond very well. If there were a 10 per cent. error it meant that 800 mice had to be injected, or, if digitalis were being tested on frogs, a 20 per cent. error meant the use of 80 animals.

Another method, which avoided this difficulty, was Hatcher's cat method for digitalis, wherein the drug was injected into a vein until the heart just stopped, and the dose was then calculated. The method of estimating the blood-sugar of a rabbit when testing insulin had the advantage that the rabbit could be used again a week later, but the sensitivity of rabbits varied from week to week. The number of animals necessary for the different tests in order to get an error of less than 25 per cent. was as follows: Adrenalin test, 1; pituitary test, 1; Clark's method for ergot, 1; auricle method for digitalis, 1; Hatcher method, 5; left ventricle of frog, 10; lymph sac of frog, 80; insulin in rabbits, 6; insulin in mice, 200. 80 frogs or 200 mice proved, however, only slightly more expensive than the smaller number of cats or rabbits, as the latter required careful watching all the time by skilled assistants.

The Value of the Laboratory Method to the Clinician.

Dr. J. H. BURN showed charts illustrating the relation between laboratory and clinical methods, saying that he doubted if practising physicians fully realised that the pharmacologist was not content merely to devise a method which measured something, but was actually measuring just what the clinician needed. Insulin had been tested by Marks's method on rabbits and on patients, and he showed the figures of the salvarsan preparations mentioned by Dr. Dale. The figures showed remarkable agreement in all cases. He also showed some unpublished figures from the Baltimore clinic in which different preparations of digitalis had been tested by clinicians and by the cat method, and suggested that the American investigators had succeeded in confirming laboratory investigations because they gave one single large dose instead of the small repeated administration more usual in this country.

The PRESIDENT observed that most clinicians had no idea how much work was done in order to make the preparations they used safe for them. Whatever drug was given certain people were going to have a violent idiosyncratic reaction and this could not be calculated. He hoped that this recent standardisation work would be incorporated in the new Pharmacopœia.

Dr. TREVAN and Dr. DALE, in reply, emphasised the necessity for setting up a standard for such substances as cod-liver oil, so that all workers could compare their preparations with one thing. The difficulty of vitamin standardisation did not seem to be properly realised.

Medical News.

ROYAL COLLEGE OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the Final Examination of the Conjoint Board held from Oct. 5th to 26th, the following candidates were approved in the subjects indicated, but are not yet eligible for diplomas:—

Medicine.—F. Augsburger, Lausanne; G. H. Barendt Cambridge and St. Bart.'s; Winifred P. Brinckman, Bristol; C. P. Campion, Univ. Coll.; H. H. Cohen, London; E. Colin-Russ, Middlesex; C. L. Cope, Oxford and Univ. Coll.; C. Davies, Birmingham; Helen L. Dunn, Charing Cross; Evelyn Durrance, Royal Free; R. W. Eldridge, Liverpool; F. W. Gayford, Middlesex; Vivienne M. Gunson and V. F. Hall, King's Coll.; E. M. V. Hensman, Middlesex; R. C. Hodges, Westminster; V. Kathirgamatamby, London; M. S. Katre, Madras; F. Kellett, Cambridge and St. George's; S. M. Kharegat, St. Bart.'s; F. E. Loewy, Middlesex; E. M. Lourie, Univ. Coll.; W. S. Maclay, St. Bart.'s; J. K. Monro, London; Millicent Moseley, Birmingham; M. G. Nimatallah, London; Mary O'Leary, St. Mary's; R. K. Pillay, London; Aileen M. S. Pollock, St. Mary's; J. S. Rake, Guy's; Marion Ravell, Royal Free; S. Shalaby, London; R. Stanton, Westminster; W. H. Tandy, Birmingham; J. R. H. Towers, Leeds; C. G. Townsend, Cambridge and Guy's; Isabel Vallance, St. Mary's; W. D. Williams, London; Elsie B. Wright, Royal Free; and H. D. Zscherpel, St. Bart.'s.

Surgery.—H. Allan, Middlesex; Sophia A. P. Allen, Charing Cross; Gertrude Alphonso, Royal Free; R. G. Apthorpe, St. Thomas's; F. Augsburger, Lausanne and Lisbon; T. G. Benjamin, Guy's; H. Berliner, Univ. Coll.; K. J. Box, St. Thomas's; Winifred P. Brinckman, Bristol; A. H. Bruce, Guy's; R. Bruce, Leeds; R. W. Butler, St. Thomas's; R. L. Cheverton, Birmingham; Pamela M. G. Churchill, King's Coll.; E. T. Clifton, Guy's; W. A. Clark, St. Bart.'s; C. L. Cope, Univ. Coll.; N. Cox, Manchester; A. R. Culley, Cardiff; P. M. Davidson, London; T. G. Davies, L. F. Day, and J. Dean, St. Bart.'s; A. O. Dreosti, St. George's; J. Ellison, Leeds; A. G. Ensor, Guy's; D. K. Evans, Cardiff; Enid C. Evans, Westminster; K. M. Foster, Birmingham; H. S. Gaussen, Guy's; J. C. Gent, St. Mary's; N. Gindi, Birmingham; L. C. Griffin, St. Thomas's; T. R. Griffiths and J. H. Gubbin, St. Bart.'s; V. C. J. Harris, Manchester; J. A. Hartley, St. Thomas's; R. A. Haythornthwaite, Westminster; H. E. Houfton, St. Bart.'s; S. G. Irlam, London; N. Iskander, Birmingham; M. I. Jackson, Cardiff; D. N. R. Jones, St. Mary's; W. B. R. Jones, St. Thomas's; C. E. Kellett, Univ. Coll.; R. A. King, St. Mary's; G. Lee, St. Thomas's; P. G. Levick, St. Bart.'s; I. N. Lewis, St. George's; J. T. Lewis, Cardiff; A. J. Lomax, Manchester; E. M. Lourie, Univ. Coll.; Annie M. McGrath, Westminster; R. W. L. May, St. Thomas's; R. L. Midgley and H. M. Mikhail, Univ. Coll.; Margaret Mitchell, Birmingham; J. K. Monro, London; P. H. L. Moore, Sydney and St. George's; W. C. W. Nixon and Margaret B. Norman, St. Mary's; D. E. Oakley, St. Bart.'s; E. N. O'Neill, St. Mary's; Muriel V. Paton, Royal Free; G. E. B. Payne, Univ. Coll.; G. C. Pether,

Middlesex; R. S. Pilcher, Univ. Coll.; M. W. Platel, St. Bart.'s; W. P. Purvis, St. Thomas's; L. J. Rae, London; L. W. Rose and W. Rosenberg, Guy's; R. Rutherford, King's Coll.; C. G. A. Sadler, St. Mary's; S. W. Savage, Univ. Coll.; S. Segal, Westminster; L. A. P. Slinger, St. Bart.'s; H. M. S. Stanley, Cardiff; J. F. Stent, St. Thomas's; C. B. V. Tait, St. Bart.'s; H. D. Tonking, St. Thomas's; R. H. Tootill, Manchester; L. P. Tupling, Guy's; S. Tyagaraja, St. Thomas's; G. N. Unnithan, Univ. Coll.; E. S. Vergette, St. Bart.'s; J. Wasserstein, London; L. A. F. Wiles, St. Thomas's; H. M. Willoughby, St. Bart.'s; C. G. Windsor, St. Thomas's; and C. E. Woodrow, St. Bart.'s

Midwifery.—V. H. Addison, St. Bart.'s; N. H. Allen, Guy's; B. J. E. Anson, King's Coll.; Cecile H. D. Asher, Royal Free; N. Attygalle, Ceylon and Middlesex; A. Batty, Middlesex; H. Berliner, Univ. Coll.; Joan H. Blackledge, Royal Free; A. J. Blumenthal, Univ. Coll.; Eleanor D. Blunt, Royal Free; R. V. Bowles, Univ. Coll.; W. J. Branday, Birmingham; I. G. Briggs, London; Muriel Brighton and Helen R. B. Buck, Royal Free; H. J. Burrows, St. Bart.'s; E. Burton and W. A. Busby, London; R. W. Butler, St. Thomas's; Mildred Carpenter, Univ. Coll.; D. C. Carroll, London; C. H. A. Carty-Salmon, St. Bart.'s; M. Cohen, Middlesex; Mary C. E. Constantine, Royal Free; P. J. Cowin and W. V. Cruden, St. Bart.'s; Constance M. Cusden, Charing Cross; J. G. A. Davel, London; C. S. Davies, St. Bart.'s; W. N. Dickensen, St. Thomas's; C. W. L. Dodd, London; A. O. Dreosti, St. George's; Margaret R. Dunlop, Royal Free; H. G. Edmunds, Univ. Coll.; E. E. Elzawahry, Manchester; Geraldine W. Everett, Royal Free; F. M. M. Eyton-Jones, St. Bart.'s; Margaret C. Falconar, Royal Free and St. Mary's; R. V. Farr and K. M. Foster, Birmingham; J. P. M. Fraulo, Guy's; V. Freeman, Univ. Coll.; Mabel Cassells Freeston, Royal Free; K. T. Gajjar, Univ. Coll.; C. E. Gallagher, Guy's; J. H. P. Games, Univ. Coll.; R. J. S. Garrow, Leeds; B. H. Gibson, St. Bart.'s; R. D'A. Gifford, Birmingham; F. H. Gillett, St. Thomas's; J. L. Glover, Guy's; J. H. Gubbin, St. Bart.'s; Bridget S. P. Gurney, Royal Free; H. Hannesson, London; V. C. J. Harris, Manchester; W. R. E. Harrison, St. Bart.'s; Lilian M. J. Henry, King's Coll.; Laurel K. Heny, Royal Free; W. A. C. Hortor, Middlesex; H. E. Houfton, St. Bart.'s; P. Inwald, Middlesex; A. H. Jackson, Royal Free; Amy L. Jagger and T. E. James, Cardiff; D. N. Rocyn Jones, St. Mary's; W. P. Jones, Univ. Coll.; Lily A. Jörgensen, Royal Free; C. S. Kah, St. Thomas's; R. A. King, St. Mary's; Caroline M. Kingsmill, Royal Free and St. Mary's; H. J. Krichefski, Univ. Coll.; P. G. Levick, St. Bart.'s; O. I. Lewis, London; E. W. Lindeck, Univ. Coll.; Olive H. Lister, King's Coll.; Florence Louis, Royal Free; L. P. McBrien, St. Thomas's; D. J. MacMyn, King's Coll.; R. L. Midgley, Univ. Coll.; Mary M. Moller, Royal Free; J. K. Moore, Guy's; C. S. Morgan, St. Thomas's; O. N. Morris, King's Coll.; Gertrude M. Nicholson, Durham; H. G. Nimbalker and A. B. Nutt, Sheffield; D. E. Oakley, St. Bart.'s; Ethel E. M. Ogilvie, Royal Free; Greta K. Olsson, Westminster; Gwendoline D. Orlebar, Charing Cross; R. L. Osmaston, Univ. Coll.; M. N. Patel, London; N. F. Pearson, King's Coll.; A. P. Peeney, Manchester; E. U. H. Pentreath, St. Bart.'s; G. C. Pether, Middlesex; Aileen M. S. Pollock and Monica M. M. Power, St. Mary's; J. C. Preston, Manchester; W. P. Purvis, St. Thomas's; A. Rabinowitz, Guy's; L. J. Rae, London; J. S. Rake, Guy's; Marion Ravell, Royal Free; Dorothy K. Reynolds, King's Coll.; Enid H. Rockstro, Univ. Coll.; Pattie E. Rose, St. Mary's; P. H. Row, Madras and London; H. Royle, St. Bart.'s; R. Saran, Calcutta; H. R. D. Schofield, St. Mary's; I. Schoub, London; W. H. Scriven and Doris G. Sharvelle, King's Coll.; M. Shlosberg, Manchester; E. J. Silverman and E. Sladen, Middlesex; F. C. Smith, London; S. B. S. Smith, St. Bart.'s; P. D. B. Spence, Guy's; J. F. Stent, St. Thomas's; D. D. Stidston, St. Mary's; D. W. Stuart, King's Coll.; B. M. Sundaravadanan, Madras; C. B. V. Tait, St. Bart.'s; Olive M. Thomas, Royal Free; R. G. Thomas, St. Thomas's; Doris H. Tomes, Westminster; H. D. Tonking, St. Thomas's; Sybil E. Tremellen, King's Coll.; F. L. H. Voller, St. Thomas's; M. R. Wadia, Bombay; C. W. Walker, St. Thomas's; J. Walker, Leeds; G. A. B. Walters, St. Thomas's; Nora W. Wamsley, Charing Cross; W. G. H. Warner, St. Mary's; J. Wasserstein, London; Maeve Whelen, Royal Free; Edith V. E. Whidborne, King's Coll.; G. D. D. Wijesekere, Ceylon; W. D. Williams, London; H. M. Willoughby, St. Bart.'s; C. G. Windsor, St. Thomas's; Dorothy L. Woodroff, King's Coll.; C. E. Woodrow, St. Bart.'s; E. C. Wynne-Edwards, St. Thomas's; and Margaret I. Yeatman, Charing Cross.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.—A quarterly meeting of the College was held on Nov. 2nd, Dr. George M. Robertson, the President, in the chair. Dr. Leybourne Stanley Patrick Davidson and Dr. William Edward Foggie took their seats as Fellows of the College. Dr. Ronald Gray Gordon, Dr. James Richan Drever, Dr. Alan Leonard Smith Tuke, and Dr. John Farquhar Christie were elected Fellows of the College. The Hill Pattison-Struthers Bursaries in anatomy and physiology and in clinical medicine were awarded to Hamish Gordon Somerville and Henry Boyd Martin respectively. The Wood Bursary was awarded to Joseph Peter Collie. The Licence of David William Anderson, which had been suspended on May 5th, 1925, was restored. At an extraordinary meeting of the College, held on the same date, the Licences of Edalji Jamshedji Treasuryvala and Kaikhushru Edalji Master were suspended sine die.

UNIVERSITY OF LONDON.—The University Medal in Branch VI. (Tropical Medicine) of the M.D. Examination, July, 1926, has been awarded to Richard Murchison Morris, of the London Hospital and the London School of Tropical Medicine.

University of London Lectures.—A course of two (advanced) lectures on Colour Vision will be given at University College, Gower-street, W.C. 1, by Prof. H. E. Roaf, at 5 P.M. on Wednesdays, Dec. 1st and 8th.—The Semon Lecture, 1926, entitled Nervous Affections of the Œsophagus, will be given in the lecture hall of the Royal Society of Medicine, 1, Wimpole-street, W., by Dr. A. Brown Kelly, at 5 P.M., on Thursday, Dec. 2nd.—A course of five lectures on the Influence of Environment on Bacteria will be given by Dr. F. W. Twort, superintendent of the Brown Institution, in the theatre of the Royal College of Surgeons, Lincoln's Inn-fields, W.C., at 4 P.M. on Monday and Tuesday, Dec. 6th and 7th, Thursday, Dec. 9th, and Monday and Tuesday, Dec. 13th and 14th. Admission to all these lectures will be free, without ticket.

ROYAL SANITARY INSTITUTE.—A sessional meeting is to be held on Saturday, Nov. 20th, in the Town Hall, Colchester, at 11 A.M., when there will be discussions on Rheumatism in School Children (Dr. R. H. Vercoe) and the Plan and Design of a Public Elementary School (Mr. E. S. Miles). Dr. Charles Porter will preside.

OPHTHALMOLOGICAL SOCIETY.—The annual congress of the Ophthalmological Society of the United Kingdom will be held at Liverpool from April 28th to 30th.

PEOPLE'S LEAGUE OF HEALTH.—Dr. Neill Hobhouse will lecture on Association of Ideas, Recognition, and Memory on Monday, Nov. 15th, at 6 P.M. at the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W. 1.

CENTENARY OF LAËNNEC.—The French Ambassador has informed H.M. Government that the centenary of Laënnec will be celebrated in Paris from Dec. 13th to 15th, and that Prof. Chauffard, of the Academy of Medicine at Paris, is in charge of the arrangements.

ROYAL INSTITUTE OF PUBLIC HEALTH.—The remaining lectures of the course on Problems of Personal and Public Health will be given at the Institute, 37, Russell-square, London, W.C., on Wednesdays at 4 P.M. as follows: Nov. 17th, Dr. R. H. Miller, the Problem of Rheumatism and Rheumatic Heart Disease in Children; Nov. 24th, Dr. C. W. Saleeby, From Heliotherapy to Heliohygiene; Dec. 1st, Dr. P. C. Varrier-Jones, Settlements for Tuberculous Workers; Dec. 8th, Lieut.-Colonel F. E. Fremantle, the Rôle of Parliament in Regard to Health Legislation.—The Harben lectures will be delivered in the lecture theatre of the Institute by Prof. W. W. C. Topley on Quantitative Experiments in the Study of Infection and Resistance, on Nov. 15th, 18th, and 22nd, at 4 P.M. No tickets of admission are required.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Thursday, Nov. 18th, at 5 P.M., Mr. Zachary Cope will lecture on Acute Intestinal Obstruction at the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W. On Friday, Nov. 19th, at 1 P.M., Mr. Charles Goulden will give a clinical demonstration in ophthalmology at the Royal London Ophthalmic Hospital. On the same date, at 2 P.M., Mr. Clifford Morson will give a demonstration in surgery at St. Peter's Hospital. The lecture and demonstrations will be open to the medical profession without fee. From Nov. 15th to Dec. 4th the Royal Waterloo Hospital will hold a course in medicine, surgery, and gynæcology, for which the fee will be three guineas. From the same date St. John's Hospital will hold a four weeks' course in dermatology; there will be clinical instruction and two lectures a week, and a series of practical demonstrations in pathology will be arranged. The staff of St. Mark's Hospital is undertaking a comprehensive course in Diseases of the Rectum from Nov. 22nd for one week. From Nov. 22nd and continuing for four weeks there will be a late afternoon course in neurology at the West End Hospital, 73, Welbeck-street, London. The London Temperance Hospital is holding a general practitioners' course (4.30–6 P.M.) from Nov. 29th to Dec. 11th. Courses in obstetrics can now be provided for at the Queen Charlotte's Hospital and the City of London Maternity Hospital. Practical courses in anæsthetics can also be arranged. Personal applications may now be made to the Fellowship of Medicine for the position of clinical assistant at the Samaritan Hospital for Women. Copies of all syllabuses, the General Course Programme, and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship of Medicine.

ABERDEEN UNIVERSITY CLUB, LONDON.—The seventy-sixth half-yearly dinner will be held at Kettner's Restaurant, 29, Church-street, Shaftesbury-avenue, W. 1, on Thursday, Nov. 25th, at 7 for 7.30 P.M. Prof. W. Bulloch, F.R.S., will take the chair. Those who wish to attend should advise Dr. W. A. Milligan, 11, Upper Brook-street, W. 1, before Nov. 20th, who will be pleased to hear from any graduate of the University. The price of the ticket is 10s.

GLASGOW UNIVERSITY CLUB, LONDON.—This club will dine at the Trocadero Restaurant, Piccadilly, on Friday, Dec. 3rd, at 7.15 for 7.30 P.M. The chair will be taken by the Lord Rector (Sir Austen Chamberlain), and amongst the guests will be the Lord Chief Justice. Any Glasgow University men who, though not members of the club, desire to be present are requested to write to the Hon. Secretaries, 62, Harley House, N.W. 1.

KING'S COLLEGE HOSPITAL WAR MEMORIAL.—The Dean of King's College, the Rev. W. B. Matthews, D.D., last week dedicated two mural tablets to members of the staff who lost their lives in the war. The tablets, designed by Mr. W. A. Pite, the hospital architect, are on the west wall of the chapel and bear the names of 25 students, five nursing sisters, two men of the works department, and two porters.

VIENNA MEDICAL SCHOOL.—The syllabus of special medical courses arranged by the University of Vienna for the session 1926–27 has just been issued, and includes all the usual subjects. Persons attending these courses are exempted from the necessity of having their passports vised for Austria, provided they can produce a card of enrolment. All further information can be obtained from the Secretary, the Medical Courses, Schloesselgasse 22, Vienna 8.

CLOSING OF HARROGATE ROYAL BATH HOSPITAL.—This institution was closed last week on account of the difficulty of obtaining supplies of fuel adequate for the balneological treatment and the comfort of the patients, who have left. The waiting-list contains more than 100 names. It is hoped to reopen the hospital early in the New Year.

MEDICO-LEGAL SOCIETY.—A meeting of this society will be held at 11, Chandos-street, Cavendish-square, London, W., on Thursday, Dec. 2nd at 8.30 P.M., when a paper will be read by Prof. Harvey Littlejohn and Dr. Douglas Kerr, entitled Monoxide Poisoning: Its Increasing Medico-Legal Importance. A discussion will follow.—The society's annual dinner will be held at the Holborn Restaurant, London, W.C. 1, on Friday, Dec. 10th, at 7 for 7.15 P.M., when the President, the Right Hon. Lord Justice Atkin, will be in the chair. The members of the society are asked to communicate intention to be present and the number of guests they may bring to Mr. Ernest Goddard, hon. secretary of the society, 3, South-square, Gray's Inn, W.C. The price of the dinner is 14s. 6d., exclusive of wines.

CHILDREN'S HOSPITALS.—During the last week or two there has been remarkable activity in relation to the provision of hospital accommodation for sick children. Last week Princess Mary opened the Infants' Convalescent Home at Burnham, Bucks, which has been built as an offshoot of the Infants Hospital, Vincent-square, Westminster, of which she is President. Mr. Gomer Berry has defrayed the cost (£2700) of the freehold.—On Nov. 2nd Princess Louise, Duchess of Argyll, laid the foundation-stone of the Princess Louise Hospital for Children in North Kensington. This is a re-establishment of the Kensington Dispensary and Children's Hospital and will serve a population of nearly 100,000 in a district where there is no provision for sick children. It will accommodate about 50 in-patients and will include a dispensary for women.—The foundation-stone has also been laid of the new Royal Aberdeen Hospital for Sick Children, which is to be erected on a site of 16 acres at Forresterhill at a cost of £110,000. There are only three hospitals for sick children in Scotland, the other two being in Edinburgh and Glasgow. Prof. Matthew Hay states that this will be the best institution of its kind in the Kingdom.—Last week also there was opened a remodelled out-patient department at the Fleming Memorial Hospital for Children at Moor Edge, Newcastle-upon-Tyne.—Sir Claude Hill, Governor of the Isle of Man, has opened the "Sarah Jane Osborne Children's Ward" which has been added to Ramsey Cottage Hospital.—The Queen's Hospital for Children, Hackney-road, is in such serious financial difficulties that, unless a large sum of money is raised quickly, at least one half of the wards will have to be closed at the end of the year. Its 170 beds have long been insufficient and an appeal for £20,000 is being made.

THE Deputy Secretary to the Ministry of Health, Mr. E. R. Forber, C.B., C.B.E., has appointed Mr. D. C. L. Ward to be his private secretary.

EUGENICS SOCIETY.—Sir Bruce Bruce-Porter will preside at a meeting of this Society to be held at the London Day Training College, Southampton-row, W.C., on Wednesday, Nov. 17th, at 8 P.M., when the subjects of Mental and Physical Degeneration and Differential Birth-rate will be discussed.

SHROPSHIRE AND WALES EYE, EAR, AND THROAT HOSPITAL.—A new wing of this hospital was opened by Princess Mary last Saturday; it is named after her. There is no institution of the kind between Shrewsbury and the sea on the west; patients are received from as far away as Swansea and Aberystwyth, and its enlargement had become imperative.

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.—A quarterly meeting of this Association will be held on Tuesday, Nov. 16th, at the Horton Mental Hospital, Epsom, which will be open to inspection all day; other institutions in the neighbourhood may also be visited. The meeting will be held at 2 P.M., after luncheon, and at 3 P.M. Dr. P. K. McCowan and Dr. J. S. Harris will give a paper and clinical demonstration on Chronic Epidemic Encephalitis. As already announced, a special meeting of the Association will be held on Monday, Nov. 15th, at 4 P.M., in the house of the B.M.A., Tavistock-square, London, when Dr. Alfred Adler (Vienna) will give an address on the Cause and Prevention of Neurosis. Members and their friends are cordially invited.

DONATIONS AND BEQUESTS.—Sir Samuel Butler Provis, Whitehall-court, S.W., left £1000 to Queen's College, Cambridge, and £500 to the Chelsea Hospital for Women.—Mr. and Mrs. W. J. Courtauld, of Halstead, Essex, have given £1000 to endow a bed at Chelmsford Hospital.—Mr. Fred Needler, of Hull, has made a donation of £1000 to the Lord Mayor's Hospital Sunday Fund to commemorate the visit of the Prince of Wales to his firm's works.—The King has sent £500 to the West Norfolk and Lynn Hospital, the money being allocated from the admission fees to Sandringham grounds during the summer.—Mr. John Bullough, Over Hulton, Atherton, Lancs, besides other bequests, gave £500 to the Leigh Infirmary, the Mary Bullough Memorial Institute, £200 each to the Atherton Sick Nursing Association and the Atherton Guild of Help, and £2000 to his nurse.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Opening of Autumn Session.

PARLIAMENT reassembled on Tuesday, Nov. 9th, for the autumn session.

Business Before Christmas.

Replying to Mr. CLYNES, Mr. BALDWIN (Prime Minister), said that among the Bills which the Government hoped to pass before the prorogation were the following: The Housing of Rural Workers Bill, the Mental Deficiency Bill, the Prisons (Scotland) Bill, the London University Bill, the Legitimacy Bill, the Lead Paint Poisoning Bill, the Local Authorities Bill, the Smoke Abatement Bill, the Coroners Amendment Bill, and the Births and Deaths Registration Bill. It was not proposed to proceed with the Factories (No. 2) Bill this session.

HOUSE OF LORDS.

TUESDAY, NOV. 9TH.

Protection for Juveniles.

Viscount ASTOR asked in what measures the Government proposed to give the protection promised on May 18th, 1926, to juveniles between the ages of 14 and 18 engaged in occupations at present unregulated by statute.

The EARL OF PLYMOUTH (Captain Gentleman-at-Arms) said that the new Factories Bill did not include the juveniles referred to. He did not think it could be so amended as to include them. He regretted that he could not give a very definite answer to Lord Astor's question, but the Government had not yet taken a decision on the matter. Nor had Parliament yet taken a decision on the Factories Bill, and the Government, while they had every sympathy with, and wished to improve the lot of, juveniles engaged in unregulated employment, felt that it would be premature to introduce legislation on that matter until the question of the conditions and hours of labour of young persons employed in factories had been settled.

HOUSE OF COMMONS.

TUESDAY, NOV. 9TH.

Pensioners and Hospital Treatment.

Sir CHARLES CAYZER asked the Minister of Pensions how many ex-Service men whose malady was admitted to be attributable to, or aggravated by, war service, were awaiting sanatorium or hospital treatment at the present time; if there was any accumulation of such waiting cases; and when his department expected to be able to deal with them. —Lieut.-Colonel G. F. STANLEY replied: The number of ex-Service men awaiting admission to sanatoria or hospitals was, at the end of September last (the latest date for which figures are available), 328. This number is well within the average weekly number of admissions to Ministry hospitals alone, and I am satisfied that there is no accumulation of cases awaiting treatment.

Medical Inspection of Dairy Farms.

Sir CHARLES CAYZER asked the Minister of Agriculture whether he was aware of the campaign now being promoted in many urban districts with the object of authorising all medical officers in any district to which milk was supplied to inspect the farm or farms from which such supplies originated; what was the attitude of his department on the matter; and whether he was aware of the objections from every standpoint of the dairying interest to such policy. —Sir KINGSLEY WOOD replied: My right hon. friend has received copies of resolutions passed by a number of urban authorities in the sense indicated by my hon. friend. My right hon. friend is aware of the objections of the dairying interest to the policy recommended in these resolutions, and he does not at present contemplate the introduction of legislation to amend the Milk and Dairies (Consolidation) Act, 1915, which now governs this matter.

Poor-law Statistics and Coal Disputes.

Mr. HERBERT WILLIAMS asked the Minister of Health whether he could give comparative statistics of the numbers of persons in receipt of Poor-law relief, and of the cost of such relief as a result of the disputes in the coal-mining industry which took place in the years 1893, 1898, 1921, and 1926.—Sir KINGSLEY WOOD, Parliamentary Secretary to the Ministry of Health, replied: It is estimated that in the course of the four disputes mentioned the following increases occurred in the number of persons in receipt of domiciliary relief and in the cost of such relief. It is impossible to state definitely that these increases were entirely due to the disputes or that they indicate the whole effect of the disputes upon pauperism.

(1) *Increase in Numbers.*

Period covered by dispute.	Maximum increase in numbers of persons in receipt of domiciliary relief in areas directly affected by the dispute.		Net increase in numbers of persons in receipt of domiciliary relief in England and Wales at the same date.	
	Number.	Percentage.	Number.	Percentage.
1893 (June to November)	2,270	11	25,489	5
1898 (end April to July)	43,751	155	32,200	6
1921 (April 1st to July 1st)	464,683	373	647,500	144
1926 (May 1st to date)*	1,162,592	337	1,266,095	126

* This estimate covers period ended Oct. 30th, 1926.

(2) *Increase in Cost of Relief.*—Records showing the cost of relief during the period of the earlier disputes are not available, but it is estimated that during the dispute in 1921 the cost of outdoor relief in money and kind in the areas directly affected increased by at least £850,000, As compared with the rate of expenditure in April, 1926, the cost of outdoor relief in money and kind was greater during the period from the beginning of May, 1926, to the end of October, 1926, by approximately £8,800,000 in the areas directly affected by the dispute.

Imported Machine-Skimmed Condensed Milk.

Mr. RYE asked the Minister of Health whether he was aware that machine-skimmed condensed milk, lacking in nutritive quality, was being imported into Great Britain in increased quantities; and, what steps, if any, he would take to ensure that such imported milk was not sold for infant consumption.—Sir KINGSLEY WOOD replied: My right hon. friend is aware that the imports of condensed machine-skimmed milk are increasing. The Condensed Milk Regulations require that every tin containing this article shall be abelled with the words "machine-skimmed" and "unfit for babies." He does not think that it is practicable to take any further steps to ensure that this article is not sold for infant consumption.

Farmers' Families and the Milk and Dairies Order.

Lieut.-Colonel ACLAND-TROYTE asked the Minister of Health whether he would take steps to exempt from the Milk and Dairies Order farmers who sold milk only to their own farm workers and their families.—Sir KINGSLEY WOOD replied: As at present advised my right hon. friend sees no reason for exempting from the requirements of the Order farmers who sell milk only to farm workers and their families. There seems no reason why such persons should not have the same protection as is accorded to the rest of the community by the Milk and Dairies Order.

The Sale of Impure Flour.

Mr. FORREST asked the President of the Board of Trade whether his attention had been drawn to the allegations regarding the impurity of the flour sold to the general public; and what, if any, steps he was taking or had taken in this matter.—Mr. NEVILLE CHAMBERLAIN replied: I am aware that it is a common practice to add certain chemical substances to flour with the object of modifying its baking properties. The question whether such additions are objectionable on grounds of health and what restrictions, if any, should be placed on them in the interest of the public health has been referred to a Departmental Committee for consideration and report.

Study Facilities for Indian Members of the I.M.S.

Colonel DAY asked the Under Secretary of State for India whether the claims of the Indian members of the Indian medical service, so far as they related to facilities for study, had received further consideration, and with what result. —Earl WINTERTON replied: My noble friend has recently sanctioned a scheme of which one of the objects is to provide certain passage facilities for Indian officers of the Indian medical service who desire to avail themselves of study leave in this country. I hope that particulars will be announced shortly.

Grant to University of London.

Sir W. DAVISON asked the Chancellor of the Exchequer whether any, and if so what, grant from public funds had recently been promised to the University of London; in what circumstances had such grant been promised; and what conditions had been attached to the same.—Mr. CHURCHILL, Chancellor of the Exchequer, replied: I promised in June last on behalf of His Majesty's Government, that we would be prepared within certain financial limits to ask Parliament to make provision for improved accommodation of the University, subject to approval by the Treasury of plans to be formulated by the Senate.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY, Burlington House, Piccadilly, W.

THURSDAY, Nov. 18th.—4 P.M., Meeting to receive Report of Council. 4.30 P.M., *Papers to be read:* W. S. Patton and E. Hindle: Reports from the Royal Society's Kala-Azar Commission in China, Nos. 1–5 (communicated by Dr. H. H. Dale). Major Patton will review the work done and in progress by the Commission in China. *Papers to be read in title only:* R. Hill: The Chemical Nature of Hæmochromogen and its Carbon Monoxide Compound (communicated by Sir Frederick Hopkins). H. Gremels and R. Bodo: The Excretion of Uric Acid by the Kidney (communicated by Prof. E. H. Starling). C. H. Browning, J. B. Cohen, S. Ellingworth, and R. Gulbransen: The Antiseptic Properties of the Amino Derivatives of Styryl and Anil Quinoline. T. S. P. Strangeways and F. L. Hopwood: The Effects of X Rays upon Mitotic Cell Division in Tissue Cultures in vitro (communicated by Sir William Hardy). Sir Charles Sherrington and R. S. Creed: Observations on Concurrent Contraction of Flexor Muscles in the Flexion Reflex. S. B. Schryver and H. W. Buston: The Isolation of Some Hitherto Undescribed Products of Hydrolysis of Proteins, Part III. (communicated by Prof. V. H. Blackman). J. A. Crowther: The Action of X Rays on *Colpidium colpoda* (communicated by Sir William Hardy).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY, Nov. 16th.—5.30 P.M., GENERAL MEETING OF FELLOWS. Ballot for election to the Fellowship. 8.30 P.M., PATHOLOGY. Papers: Dr. J. A. Murray: Delayed Successful Autoplasty of Carcinoma. Dr. J. G. Greenfield: Adanmantinoma of the Hypophysis

Cerebri. Dr. Aldo Castellani: (1) Notes on Some Little-known Intestinal Bacteria. (2) Further Observations on Certain Phenomena of Probable Symbiotic Origin.

WEDNESDAY.—5 P.M., HISTORY OF MEDICINE. Papers: Prof. William Wright: Mediæval Conception of the Anatomy and Physiology of the Central Nervous System. Dr. Arthur Davies: A Montpellier Diploma.

THURSDAY.—5 P.M., DERMATOLOGY. (Cases at 4 P.M.) ANNUAL DINNER OF THE SOCIETY: Hotel Victoria, 7.30 for 8 P.M.

FRIDAY.—8 P.M., OBSTETRICS AND GYNÆCOLOGY. Cases: Prof. Henry Briggs: Pregnancy and Ascites. Prof. Beckwith Whitehouse: Secondary Ovarian Carcinoma Treated by Transfusion of Maternal Blood and Injections of Radiated Ascitic Fluid. Paper: Prof. Louise McIlroy and Dr. Alfreda Baker: The Causes and Prevention of Antenatal, Intranatal, and Neonatal Death. 8.30 P.M., ELECTRO-THERAPEUTICS. Paper: Dr. Walter J. Turrell: The Physio-Chemical Action of Interrupted Currents in Relation to Their Therapeutic Effects.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

Owing to illness, Prof. Mühlens is unable to give his paper on Plasmoquine. In consequence of this, the Laboratory Meeting will be held at the London School of Hygiene and Tropical Medicine on Thursday, Nov. 18th, the chair to be taken at 8.15 P.M. The following, amongst others, will give demonstrations: Dr. H. B. Newham, Dr. P. H. Manson-Bahr, Dr. C. M. Wenyon, Dr. H. H. Scott, Dr. J. G. Thomson, Dr. P. A. Buxton, Dr. J. W. A. Cameron, Dr. Aldo Castellani, Dr. C. A. Hoare, Dr. A. C. Stevenson, and Dr. H. M. Shelley.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.

FRIDAY, Nov. 19th.—5 P.M., The Very Rev. Dean Inge: Racial Degeneration. (David Lloyd Roberts Lecture.)

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, Nov. 15th, to SATURDAY, Nov. 20th.—FELLOWSHIP OF MEDICINE. Special lecture at the Medical Society of London, 11, Chandos-street, Cavendish-square, W. Thurs., 5 P.M., Mr. V. Z. Cope: Acute Intestinal Obstruction. Free to members of the medical profession.—ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C. Fri., 1 P.M., Mr. Goulden: Clinical Demonstration. Free to members of the medical profession.—ST. PETER'S HOSPITAL, Henrietta-street, W.C. Fri., 2 P.M., Mr. Clifford Morson: Clinical Demonstration. Free to members of the medical profession.—ROYAL WATERLOO HOSPITAL, Waterloo-road, S.E. Special course in Medicine, Surgery, and Gynæcology.—ST. JOHN'S HOSPITAL, Leicester-square. Special course in Dermatology. Practical demonstration in pathology if desired.—LONDON LOCK HOSPITAL, Dean-street. Clinical course in Venereal Diseases. Instruction in the Out-patient Department. Further information from the Secretary of the Fellowship of Medicine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY, Nov. 15th.—2 P.M., Medical Cases in the Wards. 2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.

TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.

WEDNESDAY.—2.30 P.M. to 5 P.M., Medical Skin and Eye Clinics. Operations.

THURSDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose, and Throat Clinics. Operations.

FRIDAY.—2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.

On Wednesday, Nov. 17th, and Friday, Nov. 19th, at 2.30 P.M., there will be special demonstrations of Dermatological and Medical Cases by Dr. W. Jenkins Oliver and Dr. L. R. Yealland respectively.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith.

MONDAY, Nov. 15th.—11 A.M., Mr. Tyrrell Gray: Surgical Wards. 12 noon, Mr. Simmonds: Fractures and Applied Anatomy. 2 P.M., Dr. Scott Pinchin: Medical Out-patients.

TUESDAY.—11 A.M., Mr. Endean: Venereal Diseases. 12 noon, Dr. Burrell: Chest Cases. 2 P.M., Mr. Banks-Davis: Throat, Nose, and Ear Dept.

WEDNESDAY.—10.30 A.M., Dr. Burnford: Medical Wards. 2 P.M., Dr. Owen: Medical Out-patients. 2 P.M., Mr. Gibb: Eye Dept.

THUSRDAY.—11 A.M., Resident Assistant Surgeon: Surgical Wards. 2 P.M., Mr. MacDonald: Genito-Urinary Department. 2 P.M., Mr. Donald Armour: Operations.

FRIDAY.—10 A.M., Sir Henry Simson: Gynæcological Operations. 12.15 P.M., Dr. Pritchard: Modern Methods in Medicine. 2 P.M., Mr. Sinclair: Surgical Out-patients.

SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy Department. 10 A.M. Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks-Davis: Throat, Nose, and Ear Operations.

Daily, 10 A.M. to 5 P.M. Operations, Medical, Surgical, and Special Out-patients Departments, Operations. Saturday, 10 A.M. to 1 P.M.

UNIVERSITY COLLEGE, Gower-street, W.C.

WEDNESDAY, Nov. 10th.—5 P.M., Dr. C. H. Best: Insulin. (Second of four advanced lectures in Physiology.)

POST-GRADUATE HOSTEL, Imperial Hotel, Russell-square, W.C.

TUESDAY, Nov. 16th.—9 P.M., Prof. C. A. Pannett: Treatment of Gastric and Duodenal Ulcers.

FRIDAY.—9 P.M., Dr. Maule Horne: The Practitioner and the Public Health Man.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY, Nov. 16th.—5 P.M., Dr. A. Whitfield: Diseases Due to Fungi (1).

THURSDAY.—6 P.M., Dr. J. T. Ingram: Pathology Demonstrations.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street.

THURSDAY, Nov. 18th.—4 P.M., Dr. Poynton: Some Inspiring Cases of Rheumatism.

NATIONAL HOSPITAL, Queen-square, Bloomsbury, W.C.

MONDAY, Nov. 15th.—2 P.M., Dr. Hinds Howell: Out-patient Clinic. 3.30 P.M., Mr. Williamson-Noble: Optic Atrophy.

TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M. Mr. Armour: Head Injuries.

THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Dr. Gordon Holmes: Cerebral Disturbances of Vision.

FRIDAY.—2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Mr. Perkins: The Treatment of Poliomyelitis.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

FRIDAY, Nov. 19th.—4 P.M., Mr. Armour Brown: Nasal Obstruction.

CHADWICK PUBLIC LECTURES.

MONDAY, Nov. 15th.—5.15 P.M. (in the Barnes Hall of the Royal Society of Medicine, 1, Wimpole-street, W.), Prof. H. J. Fleure: Racial Characters of the Human Skin and Racial Types in Relation to Health. (Malcolm Morris Memorial Lecture.)

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C.

WEDNESDAY, Nov. 17th.—4 P.M., Dr. R. H. Miller: The Problem of Rheumatism and Rheumatic Heart Disease in Children.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSES

TUESDAY, Nov. 16th.—4.15 P.M., Dr. A. Ramsbottom: Malignant Disease of the Lungs.

FRIDAY.—4.15 P.M., Mr. A. H. Burgess: Cancer of the Gastro-Intestinal Tract.

ST. MARGARET'S HOSPITAL FOR WOMEN, Acomb-street, Whitworth Park, Manchester.

WEDNESDAY, Nov. 17th.—4 P.M., Mr. A. C. Magian; The Use of X Rays in the Diagnosis of Pregnancy.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.

FRIDAY, Nov. 19th.—3.30 P.M., at the Royal Infirmary: Mr. Kerr: Chronic Diseases of the Maxillary Antrum.

ANCOATS HOSPITAL POST-GRADUATE COURSE.

THURSDAY, Nov. 18th.—4.15 P.M., Mr. F. Holt Diggle: Tonsillectomy.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.

TUESDAY, Nov. 16th.—4 P.M., Dr. Hector Charles Cameron: Some Forms of Acidosis in Children. Discussion to be opened by Dr. J. H. P. Paton.

Appointments.

BEDFORD, DAVIS EVAN, M.D. Lond., M.R.C.P. Lond., has been appointed Assistant Physician to the Middlesex Hospital, London.

COLVILLE, E. T., M.B., B.S. Durh., D.P.H., Medical Officer for the Ashington Urban area.

HERINGTON, C., M.B., B.S. Lond., D.P.H., Medical Officer of Health for Ilkeston.

Liverpool Heart Hospital: PAUL, F. T., F.R.C.S. Eng., Honorary Consulting Surgeon: BICKERTON, T. H., M.R.C.S., Honorary Consulting Ophthalmic Surgeon.

Certifying Surgeons under the Factory and Workshop Acts: RICHARDSON, J. C. R., M.B., Ch.B. Camb. (Witham, Essex); STEVENS, A. L. B., M.B., B.Ch. Oxf. (Thames District, Oxford); and SKELTON, J. B. G., L.R.C.P. Lond., M.R.C.S., D.P.H. (Gosport, Southampton).

Vacancies.

For further information refer to the advertisement columns.

Accrington, Victoria Hospital.—H.S. £150.

Admiralty.—Dental Surgeons for the Royal Navy.

Birmingham and Midland Homœopathic Hospital and Dispensary.—H.S. £150.

Brighton County Borough Mental Hospital, Hayward's Heath.—Second Asst. M.O. £300.

Brighton, Royal Sussex County Hospital.—Cas. H.S. £120.
Buxton, Derbyshire, Devonshire Hospital.—Asst. H.P. At rate of £150.
Cancer Hospital, Fulham-road, S.W.—Jun. Radiologist. £500.
Carlisle Non-Provident Dispensary.—Res. M.O. £300.
Charing Cross Hospital, W.C.—Res. M.O. £400. Res. Anæsthetist. At rate of £100. Also Asst. P.
Chelsea Hospital for Women, Arthur-street, S.W.—Jun. H.S. At rate of £100.
Chorley Hospital.—H.S. At rate of £150.
Downs Hospital for Children, Sutton, Surrey.—Asst. M.O. £500.
Dublin, Royal City Hospital.—Visiting Surgeon.
Elizabeth Garrett Anderson Hospital, Euston-road, N.W.—H.P. Obstet. Asst. and two H.S.'s. Each at rate of £50. Also Clin. Assts.
Evelina Hospital for Children, Southwark, S.E.—H.S. £120.
Federated Malay States Medical Dept.—Radiologist. £700.
Hastings, Royal East Sussex Hospital.—Hon. Asst. S.
Hereford, Herefordshire General Hospital.—Hon. S. to Ear, Nose and Throat Dept.
Hospital for Sick Children, Great Ormond-street, W.C.—H.P. and H.S. Each at rate of £50.
Ipswich, Heathfields Infirmary, &c.—Asst. Res. M.O. £250.
L.C.C. Mental Hospital.—Eighth Asst. M.O. £423.
Leicester Royal Infirmary.—Hon. Radiologist.
London, Female Lock Hospital, 283, Harrow-road, W.—Hon. Obstet. S.
Lucknow University.—Prof. of Anatomy. Rs.1450 per mensem.
Manchester, Baguley Sanatorium.—Asst. M.O. £350.
Margate, Royal Sea Bathing Hospital for Surgical Tuberculosis.—Two H.S.'s. At rate of £200.
Miller General Hospital for South-East London, Greenwich-road, S.E.—Asst. P. and two Asst. S.'s.
National Hospital, Queen's-square, W.C.—Res. M.O. £200.
Norwich, Norfolk and Norwich Hospital.—Cas. O. and H.S. £120.
Oxford, Radcliffe Infirmary and County Hospital.—Hon. Asst. S. and Hon. Asst. Phys. to Electro-Therapeutic Dept.
Plymouth, South Devon and East Cornwall Hospital.—Hon. Asst. P.
Portsmouth, St. Mary's Infirmary, &c.—Third Asst. Res. M.O. £250.
Prescot Union Institution, Whiston.—Hon. Res. Asst. M.O. £300.
Royal College of Surgeons of England.—Election to Court of Examiners. Also Election of Examiner in Dental Surgery.
Royal Free Hospital, Gray's Inn-road, W.C.—Surg. Reg. £200. Med. and Gynæcological Regs. Each £100. Also H.S.'s., H.P., &c., £100 each.
St. Thomas's Hospital.—M.O. in Charge of Electro-Therapeutic Dept.
Shanghai Municipal Council, Public Health Dept.—Asst. Pathologist. Tls.600 per mensem.
Shrewsbury, Salop Mental Hospital.—Senior Asst. M.O. £500.
South Uist Parish and Northern Division.—M.O. and Pub. Vaccinator. £620.
Stoke-on-Trent, North Staffordshire Royal Infirmary.—H.P. £150.
Truro, Royal Cornwall Infirmary.—H.S. £170.
West London Hospital, Hammersmith, W.—Phys. Also H.S., H.P., Res. Asst. Cas. O. and Aural and Ophth. H.S. Each at rate of £100.

The Chief Inspector of Factories announces the following vacant appointments for Certifying Factory Surgeons: Chichester, Sussex; Littlebourne, Kent and Penicuik, Edinburgh.

Births, Marriages, and Deaths.

BIRTHS.

BATTEN.—On Oct. 30th, at Lyndhurst-road, Hampstead, the wife of Lindsey W. Batten, M.B., M.R.C.P., of a daughter.

DEATHS.

BRABANT.—On Nov. 3rd, at The Cottage Hospital, East Cowes, after a long illness, Thomas Hughes Brabant, M.R.C.S., L.R.C.P., aged 77.
CAIRD.—On Nov. 1st, at Edinburgh, suddenly, Francis Mitchell Caird, M.B., C.M., F.R.C.S.E., LL.D., of Royal-terrace, Emeritus Professor of the Regius Chair of Clinical Surgery, Edinburgh University.
GIRLING.—On Oct. 31st, at Southend-on-Sea, John Girling, M.D. Brussels, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A. Lond., and late of the London Hospital, aged 64.
LANE.—On Nov. 4th at the Star and Garter Home, Richmond, after a long illness, patiently borne, James Ernest Lane, F.R.C.S., late Surgeon to St. Mary's Hospital and the Lock Hospital, London, aged 69.
LUCAS.—On Nov. 6th, at The Vinery, Bury St. Edmund's, Robert Harry Lucas, M.R.C.S., L.R.C.P.
SMITH.—On All Saints' Day, at Lower Clapton-road, Roland Smith, M.R.C.S., L.S.A., J.P., in his 76th year.
STUART.—On Nov. 1st (suddenly), at his residence, "Carneal," Knebworth, Herts, Robert Charles Stuart, M.B., B.Ch., J.P.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

THE LANCET: SUBSCRIPTION RATES.

INLAND	One Year	£2 2 0
	Six Months	1 1 0
	Three Months	0 10 6
ABROAD	One Year	2 10 0
	Six Months	1 5 0
	Three Months	0 12 6

Notes, Comments, and Abstracts.

CARE OF THE FEEBLE-MINDED.

THE sixty-seventh annual report of the Royal Eastern Counties' Institution for the Mentally Defective, Colchester, contains much interesting information. The institution is supported by voluntary contributions and by the payments of patients, and is certified by the Board of Education, the Board of Control, and the Home Office. The main building is at Colchester, and adjoining it are schools and workshops, presented by the late Lord Peckover, a large farm, and separate blocks for the lower grade classes. In addition there is a special residential school for high-grade girls (Greenwood School, Halstead), similar schools for boys (East Hill House and Hillsleigh, Colchester), a special home for young women (Lexden House, Colchester), a home for five classes of adult men (Bridge Home, Witham), and the seaside home (Crossley House, Clacton-on-Sea), presented by Lord Somerleyton. The total accommodation is for 1070 patients and extensions are in contemplation to be paid for by the county councils of Essex, East and West Suffolk, and Cambridgeshire. The number under care on Jan. 1st last was 1081.

Many useful trades are successfully taught at the Peckover schools with the object of making the inmates as self-supporting as possible. All the furniture required and all the clothing—including dresses, suits, and boots—are made at the institution; large numbers of mats, brushes, baskets, and articles of wood-carving are also manufactured, and it is stated that orders can always be carried out. Some of the girls are employed in the laundry and both boys and girls are taught farm and garden work. Many other kinds of manual work are taught in the schools and useful leather and other bags and raffia baskets are made. The ability and enthusiasm with which the institution is carried on are evident and the report from a Commissioner of the Board of Control is highly favourable.

The medical superintendent, Dr. F. Douglas Turner, in his scheme for dealing with mental deficiency, favours a central institution as a sorting house, some patients being kept for training, some, of low grade, being sent to institutions of simpler type, whilst some high-grade cases, after training, pass under guardianship. In specially favourable circumstances these are allowed to go out on leave; others are retained in hostels, but sent out to work by day. Daily work is the ideal, but practical difficulties limit its application. He also gives many powerful arguments against sterilisation. During an investigation of 318 cases among the general population he found that in only 15 was a parent or a grandparent feeble-minded, and he quotes Dr. R. D. Clarkson as stating, in the Morison lectures for this year, that he had been able to discover only 6 out of 3500 cases in which the parents of mentally defective children had themselves been certified or certifiable as feeble-minded. These figures are in very sharp contrast with those commonly accepted, and Dr. Turner gives fully his reasons for believing them to be a truer estimate. The defectives who have children, he points out, are mostly high grade or border-line cases, and to enforce their sterilisation would be to throw a great onus on the medical profession with the chance of a very small and problematical gain.

The Movement in Scotland.

In connexion with Dr. Turner's report, it is interesting to note that in Scotland the movement for the better care and appropriate education of the feeble-minded is steadily gaining ground. In a recent address at the opening of extensions at the Special School at Balfour-place, Edinburgh, Mr. W. W. McKenzie, senior assistant secretary to the Scottish Education Department, said that the day of special classes in schools was over, and that the day for the policy of concentration had come. A movement being made by the Scottish Women Citizens to establish a colony for the permanent care of the feeble-minded is likely to bear fruit very soon. At the Balfour-place Special School training is successfully given in cobbling, woodwork, cookery, spinning, basketry, shirt-making, cardboard modelling, needle craft, and one or two other occupations. It is estimated roughly that, among school-children, feeble-mindedness occurs to the extent of 1 per cent., and for Edinburgh this would mean that the education authority must provide for at least 500 cases. But the difficulties at the early stages are, of course, only a small part of the problem; it is the ages after 16 that give trouble.

THIRTEEN FOREIGN DRUGS.

UNDER Section 10 (5) of the Finance Act, 1926, the Treasury may exempt from the Safeguarding of Industries Act, 1921, any article in respect of which the Board of Trade are satisfied that it is not made in any part of H.M. Dominions

in substantial quantities, and that it is not likely to be made within a reasonable period. Notice has been given by the Board of Trade that this is the case in regard to the following 13 drugs: Amidopyrin, barbitone, cocaine, cocaine hydrochloride, guaiacol carbonate, hydroquinone, methyl sulphonal, oxalic acid, phenacetin, phenazone, piperazine, salol, sulphonal. It is not a little remarkable that none of these important chemicals is made within the Empire and that the teachings of the war have so soon been forgotten on the necessity of maintaining the rudiments of self-preservation. But however ready the medical man may be to help in keeping the British manufacturer going, it is the chemist on whom primarily the onus rests, and nothing will be done until the home chemical industry decides that the production of essential drugs cannot be left to the foreigner.

AN IMPROPER INVITATION.

WE have received from certain physicians the following:—

91, Regent-street, London, W. 1.

DEAR DR. ———

We assume that you are interested in Ultra-Violet Light Therapy, and probably have many clients to whom you prescribe this new form of treatment. We therefore make no apology in drawing your attention to the Institute at the above address, which is near your consulting rooms, and is equipped with the latest types of Ultra-Violet Lamps.

A number of eminent Doctors who cannot afford the time to irradiate patients themselves pass on their clients to us, and we may say that we only treat cases under a doctor's prescription.

Naturally, we realise that you would require some monetary interest in the matter as a quid pro quo for passing your clients on to us, and we suggest offering you one-third of the fees collected from your patients. Our fees range from 7*s.* 6*d.* to £1 1*s.* per treatment, according to the client's status, and the dosage required. We are also prepared to give special rates for a course of treatment, 13 charged as 12.

The procedure which we have in mind is, that you would refer your patients to us with a prescription, marking on the prescription the fee to be charged.

Should you consider the proposition favourably, the writer would be very pleased to call upon you or meet you at 91, Regent-street by appointment to discuss the matter further.

Trusting that we may hear that you desire to co-operate with us in the scheme outlined above.

Yours very truly,
The PARKER SUNLIGHT INSTITUTE.

The recipients of this circular resent it, and the "eminent Doctors . . . . who . . . . pass on their clients" to the Parker Sunlight Institute may reconsider their policy when they see the suspicion to which it may give rise.

ACTINOTHERAPY AT GLASGOW.

IN our last issue (p. 988) it was erroneously stated that a demonstration of actinotherapy at the Robroyston Hospital was given by Dr. Kathleen Smith. This demonstration was in fact given by Dr. Alexander Smith, resident assistant physician to the hospital, and his remarks on fixation methods applied only to non-pulmonary tuberculosis. The confusion arose because Dr. Kathleen Smith acts at the Cochrane-street clinic, visited earlier in the morning.

MANUAL SELF-TREATMENT FOR CONSTIPATION.

WE cannot approve of the advice offered in a little book [1] designed to help sufferers from constipation to treat themselves. With many of the considerations advanced we can cordially agree—notably that we lack any scientific proof that uncivilised people are not troubled by constipation and that dietetic treatment is not always efficacious in curing it. But to recommend habitual insertion of the patient's unprotected vaselined finger into the rectum in order to clear out fæcal débris and to stimulate intestinal movements is to risk dangers which are even more difficult to combat than obstinate constipation. The reluctance of a medical man to make a rectal examination without a finger-stall is not due to fastidiousness but to the well-known difficulty of cleaning a finger after contamination with fæcal matter. This difficulty is not to be met by the suggestion that "the finger used, as well as both hands, should be carefully washed and scrubbed with hot water and soap, because the risk of accidental infection to self and others is slightly greater than in the ordinary wiping after a motion." The use of a rubber stall certainly diminishes the risk of contamination, but even if occasionally in cases of long-standing constipation a preliminary manual clearance must occasionally be made by the doctor, it need seldom be repeated. Any encouragement to young people to manipulate an erogenous zone must be strongly deprecated. Nowhere in this little pamphlet is any warning given that the practice might lead to the formation of bad habits much harder to cure by drugs, diet, or exercise than is constipation.

[1] Constipation: Instructions for Relieving Suffering by an Easy Method of Manual Self-treatment, by a Qualified British Surgeon. London: John Bale, Sons and Danielsson. 1926. Pp. 14. 2*s.*

MILK PASTEURISATION IN ILLINOIS.

A RECENT issue of the *Illinois Health News* gives a detailed account of work done on the pasteurisation of milk in Illinois during the year 1926. No less than 98 per cent. of all the milk used in cities in the United States having a population of 500,000 or over is pasteurised. In Illinois an estimated average of three-fourths of the milk is pasteurised in cities with a population of 30,000 or over, exclusive of Chicago. In Chicago about 99 per cent. of the milk supply is pasteurised. It is agreed that pasteurisation, if not properly done, may give consumers a false sense of security. Until recently only a very few cities in Illinois attempted to supervise milk plants including pasteurisation plants, and there was practically no inspection or supervision by any State department. The Chicago Health Department has made regular inspections of milk pasteurisation plants since 1916, when steps were taken to enforce the pasteurisation ordinance adopted by the city in 1908; and during the year under review more systematic, thorough, and detailed inspections were started when the sanitary control of the city's milk supply was placed under the immediate charge of engineers and other technical experts. In 1925, in response to a demand by various dairy, health and other public agencies, a law known as the Milk Pasteurisation Plant Law was enacted, the main provisions of which may be summarised as follows:—

(1) Pasteurisation is defined as the process of heating milk or milk products to a temperature of at least 142° F., and holding at such temperature for not less than 30 minutes.

(2) Operators of pasteurisation plants must apply to the State Department of Public Health for a certificate of approval.

(3) The State Department of Public Health shall prepare minimum requirements for the construction, equipment, operation, and maintenance of pasteurisation plants.

(4) Certain provisions are made as to the sanitary quality of the raw milk which is to be pasteurised.

It has been found that the pasteurisation plant owners, with but few exceptions, have proceeded willingly and promptly to make any changes that were found to be necessary in order to comply with the minimum requirements, any owners not so complying being compelled to discontinue operating their pasteurisation equipment and labelling the milk "pasteurised." The minimum requirements are based on present knowledge regarding the subject, and are subject to changes and additions if further study shows the need for the same. Much research has been done to determine the efficiency of various commercial pasteurisers. The most recent research work was probably that which was carried out at Endicott, New York, which included studies of the efficiency of different types of equipment under actual commercial operating conditions, as a result of which several valuable recommendations were made.

Among the more important problems which still call for research and which are now being studied are those connected with: (1) satisfactory devices for recording the actual length of time for which the milk is held at the proper temperature; (2) the question of leaky valves; and (3) foam accumulating on the top of the milk, and splash on the covers which occurs in certain types of pasteurisers. If the splash or foam is not maintained at as high a temperature as the milk it is doubtful whether the entire product is properly pasteurised.

The passage and carrying out of the Milk Pasteurisation Plant Law has already brought about marked improvement in the quality of the milk supply. Since pasteurisation was never intended to be a means for making dirty milk safe, but rather for making a clean milk safer, special attention is called to the minimum requirements in regard to the cleanliness of the raw milk brought to the plants. Enforcement of the Pasteurisation Plant Law is intended to ensure a clean milk, pasteurisation being directed towards destroying any disease-producing organisms which may accidentally be in the raw milk even when all reasonable requirements have been fulfilled at the farms.

THE LATE DR. F. H. CROWDY.—On Oct. 26th Dr. Frederick Hamilton Crowdy died at Highgate at the age of 75. Educated at the University of Edinburgh, he qualified in 1875 and graduated M.D. in 1886. For a time he was acting surgeon to the St. John's Hospital, Newfoundland, but for the last 40 years or more he had been in general practice at Highgate. He was medical officer to the Santa Claus Home for Invalid Children at Highgate, and organised numerous meetings to help in its support.

An Address

ENTITLED

THROUGH THE MAZE OF MEDICINE.

Delivered at the Scientific Medical Conference, University of Rochester, N.Y., on Oct. 26th, 1926,

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AT the eleventh hour Dr. Rhees asked me if I would come to Rochester and deliver an address in the place of Dr. Charles Martin, Director of the Lister Institute, who, unfortunately, was unable to visit America. Faced by this honourable yet onerous task, I found myself somewhat in a dilemma, for pen had to be put to paper when crossing the Atlantic, when I would be divorced from nearly all works of reference. It was clear that a strictly scientific paper was an impossibility, for there was no means of verifying facts and figures. However, the Atlantic itself furnished a clue, for the thought of a great ship like the *Leviathan* threading its way, under guidance, through a maze of waters to a desired haven led me to think of the student of medicine. Not that I would for a moment compare the average medical student to the *Leviathan*. The latter is very rapid, luxurious, presumably out to make money, indeed, many things a medical student should not be, but just as a ship on her maiden voyage leaves a home port, traverses charted waters, encounters buffetings and difficulties, yet eventually gains her objective, so the medical student ventures forth upon what we may call the maze of medicine and usually, despite trials and troubles, chiefly in the shape of examinations, makes good and is let loose upon a confiding public.

A MEDICAL EDUCATION.

It, therefore, occurred to me that it might be well to trace his wanderings through the maze. The maze itself has been the subject of careful consideration and criticism by Sir George Newman, who, in his two masterly studies, "Some Notes on Medical Education in England," published in 1918, and "Recent Advances in Medical Education in England," which appeared in 1923, has said practically all that can be said upon the matter. The second memorandum is a brilliant and fascinating piece of work, philosophic and humane, yet practical and inspiring, wherein a wealth of illustration is employed. It is, indeed, a classic utterance. It would be presumptuous, as well as useless, for me to intrude into Newman's field but, as he views the maze from the standpoint of an expert and administrator, I think it may be of interest in the first place to try to stand in the shoes of the medical student and see how he, with his limited outlook, is impressed by his new surroundings. It is not easy to do so, at least for anyone who was a medical student many years ago, for it is hard to recapture the elusive past, and, in addition, the inexorable process of evolution has imposed changes and advances of which one is not fully cognisant.

In the second place, while Newman has in yet another brochure pressed for the permeation of the medical curriculum with the preventive idea, and has indicated on broad lines how this should be accomplished, there would seem to be room for discussing in some little detail this new guide-rope which it is desired to introduce into the maze, this guiding principle which is intended to lead the student of to-day and to-morrow towards an objective, differing in some ways from that upon which the ambition of his predecessors has been set, an objective designed to make him not only a better doctor, but a more useful citizen, and to enlist his brains and knowledge in the service of the State, as a guardian of the public health.

Now it is a strange thing how little the lay public realise all that is comprised in a medical education. I fancy the parents who pay the fees are better acquainted with its magnitude, if not its complexities, than anyone else. Years ago at Khartoum, in the Sudan, Lord Kitchener paid a visit to the Gordon Memorial College, and along with Mr. (now Sir James) Currie I had an interview with him. He declared himself satisfied with what was being done at the Wellcome Tropical Research Laboratories of the Sudan Government, and asked if I thought the native students were profiting by the education given them at the College which was, in fact, really a secondary school. I said I thought they had made very good progress and had been well grounded. "Very well," he remarked, "I want you to go a stage further and turn out native medical officers. I give you two years in which to do it." "What you ask is impossible," I replied. "The word impossible is not in my vocabulary," he said, very emphatically. "Nor, as a rule, Sir, is it in mine," I ventured to retort, "but in this case what you ask *is* impossible. Do you know what course these boys would have to go through?" "Tell me," he said, and I told him in detail and could see the surprise come into his impassive countenance. It would take too long to recount our conversation, which had its humorous side. Suffice to say that Lord Kitchener abandoned his idea for the time being. However, as you may know, in memory of that great soldier and organiser there now exists a medical school in Khartoum where the Sudanese are trained to be doctors, but the curriculum is not limited to two years.

At present, however, I am not so much concerned with the length of the medical curriculum, which would seem to have reached its limit, as with its object and its general effect upon the student who, greatly daring if he only knew it, plunges sometimes unheedingly and thoughtlessly into *res medicæ*. I find myself a little at a loss in speaking to you, for I am not fully acquainted with the details of medical education in the United States. True, I have studied Flexner's book, I have also read "Martin Arrowsmith," and pondered over it, but I take it that Sinclair Lewis is scarcely an authority on medical education, although he can portray effectively certain aspects of it.

Hence, in dealing with the maze of medicine I have in mind rather the course of studies pursued by the medical students in the schools and universities of Great Britain, but believe that this does not greatly differ from that followed in the best centres of medical education in this country, while, from the point of view of the effect of his studies on the student, human nature, I take it, is much the same all the world over, and in any case there is a measure of kinship between the sons of the United States and those of Great Britain which suggests that their viewpoints cannot be vastly dissimilar. Speaking generally, it may be said that in both countries the medical student passes through the maze, guided on broad lines by the Dean of the Faculty, in details by his teachers, in many things by his fellow-seekers after knowledge, and that, at present, the link which binds together, often very loosely, the various subjects he has to study, is of a biological nature. His outlook is coloured by biology, using the word in its widest sense, although he himself may not be conscious of it.

THE STUDENT'S FIRST IMPRESSIONS.

For the purposes of our argument let us take the young student who has done little or no biology at school, and who, therefore, on beginning medicine, has to take up botany and zoology. He finds himself in a new world, the world of life viewed from the standpoint of the scientist. It is difficult for him to adjust his ideas. Not only are the terms used strange to him, the processes employed novel, the new facts a revelation, but, unless his teachers are very wise men, he sees at first everything as through a glass darkly, and is inclined to ask, "What's the use of all this to a doctor?" Botany proves, as a rule, more irksome than zoology, for vascular bundles do not appeal to him, and the study of natural

orders seems a mere waste of time. I think as a rule he appreciates the value of the training in technique in the practical work of the laboratory, but field excursions, save as an outing, are not attractive. I have often heard a student complain that he was taught all about the insides of plants and how to classify them, but was never told how to recognise the common trees and shrubs and flowers of his own country. This shows that the medical student tends to look upon botany, not as a means to an end, but as a well-defined subject, the cultivation of which should lead to botanical fruits. Even though he is studying zoology along with it, he does not see that, as Newman says, the two subjects are complementary to one another. Still less does he grasp the part that botany plays in the general scheme of his education, though it is significant that his interest quickens when those lowly forms of vegetable life, the bacteria, are presented to him, and when he is introduced to plants with medicinal and poisonous properties.

Whether it was due to the fact that I was not well taught, or that, having commenced the study of medicine at the age of 16, my intelligence was at fault, I cannot say, but I remember getting one of the shocks of my life at a zoological demonstration when the man sitting next to me nudged me in the ribs and said in a loud whisper, "That's a human tongue!" It was not only that I was brought unexpectedly for the first time into contact with the human cadaver or a portion of it, though I remember that my imagination ran riot about that tongue and its whilom possessor, but that I suddenly realised there was a close link between man and the brute creation. The human tongue, being comparatively large, was being used to demonstrate certain features of a rabbit's tongue, and ever since I have thought that while, as a rule, comparative anatomy is made to pave the way towards human anatomy, it would be well at times to reverse the process in a student's first year and, by making use of human parts, to teach the great lesson of evolution and relationship.

How important it is at this stage for the student to become familiar with Darwin's "Origin of Species"! Without it, even when well taught, he is apt to miss the true significance of his zoological studies, and, as Milton has it, "in wandering mazes lost" perceive no end. Says Newman, "if the medical man be not a biologist he is nothing," but too often he gets little chance of becoming a true biologist, being wearied by "types." He passes from the earth-worm to the snail, from the snail to the frog, from the frog to the skate and dog-fish, thence to the rabbit, and is apt to regard such as a delimited stage in his progress to an examination, rather than as an integral part of his life's work. True, things are changing for the better, but even yet the student tends to grope blindly, content to meet the immediate future.

The First Year Subjects Fundamental.

The teaching of physics, apart from biophysics, is nowadays very largely a function of the secondary school. I will not discuss the student's attitude towards it, but hope later to consider how it may be made the means of impressing the preventive idea upon his plastic mind. There are medical students who take kindly to chemistry. They are usually men with a mathematical bent, to whom the exactitude of the science appeals. To many chemistry is summed up in the word "stinks." In the past I think chemistry more than any subject has been divorced from medicine. It is true the student comes across substances which figure in the Pharmacopœia or are used as poisons, and rejoices accordingly. It is true he learns something of chemistry in industrial life and hears something about the chemical aspect of trade hazards, but, until recently, he was not taught to realise that chemistry in some form or other will follow him all through his course. If biology is the foundation of medicine, as Newman asserts, chemistry is one of its main props. Happy the first-year student who has, as at Edinburgh, a course of medical chemistry provided for him, arranged as a preparation for a future course of physiological chemistry. Too often the student views chemistry as a stumbling-block. His one desire is to get through with it and take up "real" subjects, as he calls them. To a certain extent attracted by the practical work which has something of the occult in it, he yet shies at equations as a horse at a gate, and resolves that, if only he passes, he will relegate the subject to the limbo of forgotten things. It may be that this is no longer the case, but it was so in my day, and there were I think, few students who understood that the subjects of their first year—chemistry, physics, and biology—were fundamentals, and represented the platform on which had to be built that training in science, in scientific thought and method, which is essential if medicine is to be other than mere empiricism and quackery.

Training in Anatomy.

Anatomy comes next, and in all probability the effect of the first contact of the student with the dissecting-room is never wholly effaced. Some men tremble without the door, others of tougher fibre betray no trepidation, but though, ere long, students may, as at Cambridge, speak lightly of "the meaters," to many the anatomy rooms mean their first contact with death. For a space there is a mystery about the sheeted figures, so stiff and silent, and though it passes, I am inclined to think his experience of them gives the "medico" his first sense of power. He begins to imagine that he is set apart for special work. When he dons his apron and takes in hand the scalpel he feels the rubicon is passed, and that he has in some measure become a priest of the craft of healing.

As the wonders of the human body are revealed anatomy becomes so engrossing that the student is apt to become unduly immersed in details. He has got hold of facts, and for a time their memorising seems to him a satisfactory and excellent thing. There is danger of the anatomy room becoming a mere valley, both of dry bones and dry facts with no quickening influence, nothing to link it to other branches of study. Newman, Keith, and others have dealt fully with this peril and its remedy, but it may not be easy to wean the student from the habit, easily acquired, of amassing facts and forgetting principles. Does the study of anatomy coarsen the mind? In some cases this would seem to be the case, for a time at least. Familiarity with the dead may breed some contempt for the living, but there are counteracting influences, and, to any student worth his salt, the marvels revealed by dissection should eventually bring a sense of humility and admiration, coupled possibly with wonder and pity that so delicate a mechanism as the human body is doomed to destruction and decay.

Physiology the Institutes of Medicine.

I have always thought that my old teacher, William Rutherford, "Bilirubin" as he was nicknamed after the bile-pigment he discovered, was in the right when he insisted on calling his subject the "Institutes of Medicine" instead of physiology. If physiology were always so regarded and taught the student would find this part of the maze easier than he usually does, and would perceive light ahead. If the maze be properly constituted there should not only be light ahead, but a certain refulgence behind him, proceeding from those parts of the maze he has already traversed. All the subjects he has been through should, as it were, unite in casting a beam of light on physiology, for here the student, now familiar with the dead body, contrasts it with the living. I think that apart from the histological side of the study, no subject of the course is at first so bewildering as physiology. There are so many side lines. The student has not only to grasp the mechanism and aim of the functions of the body as a whole, but, let us hope, with some recollection of physics in his mind, he must apply that subject to life and movement and consider also various

electrical reactions of the tissues. Physiological chemistry, or, as nowadays we may term it, biochemistry, which includes metabolism and endocrinology, will soon remind him that the time spent on chemistry, especially in its organic aspects, has not been wasted. Biomechanics will again remind him of his physics and will couple his physical with his anatomical knowledge. The physiology of the special senses will take his mind back to the anatomy theatre and the dissecting-room, and will once more show him how a knowledge of physics is essential to the proper understanding of such delicate mechanisms as, let us say, the eye and the ear, while his excursions into the comparatively young but all-important science of psychology should make him realise that while all thought processes centre in the brain which he has sliced and teased and sectioned, there is something intangible and elusive which, fortunately for himself, he can now liken to the wireless, and which may give him a wider conception of man's meaning and future. Lastly, when he applies his physiological knowledge in the laboratory upon the frog, upon the mammalia, there will dawn upon him a sense of the marvellous scheme of life, of its completeness as well as of its variety, of its inter-relations, of its correlations, of the smoothness and elasticity with which the body functions, of its extreme delicacy, of its marvellous strength, of its recuperative power.

Physiology is like a central chamber in the maze wherein all the other tracts he has been exploiting meet and mingle, and from which other tracts emerge. At first, confused by its very spaciousness, the student struggles to grasp its significance, but once he has got to grips with it his future is, or should be, secure, for, from this rallying ground, light beams along every tortuous out-going channel of the maze of medicine and more especially penetrates those which hear the designation "clinical."

The Principles of Pathology.

"Bugs" and "Drugs" are what the irreverent student sometimes calls the two subjects to which he is introduced when anatomy and physiology are behind him. It is rather significant that he classes pathology under "bugs," giving prominence to its bacteriological side. If he imagines, however, that bacteria and bacterial processes dominate the whole of pathology he will have a rude awakening. Sir Arthur Keith, in a recent lecture, recommended the student to pay an occasional visit to the post-mortem room while studying anatomy. It was sage advice, but most students never see what have been called the "doctor's failures," those tragic forms from the wards, until they have begun to wander through that part of the maze, a very large and intricate part, where they learn about tiny visible and invisible foes of man and discover what a mess disease can make of the form and functions of the wonderful mechanism of which they themselves are examples. The student, as a rule, takes kindly to this "science of morbid processes," as Newman aptly names it. For one thing, the bacteria are interesting and tangible. Most folk have a little of the farmer or hunter about them, relics of ancient days and forbears, and so it is pleasant to cultivate cocci and bacilli and to search for them in the blood and organs of some hapless guinea-pig or rat. For another the student renews his acquaintance with the pathogenic protozoa, parasitic worms, and noxious insects, is reminded of their complex life-cycles, and begins to understand how important they are, especially in the romantic domain of tropical medicine. Yet again he sees under the microscope sections of tissues with which he is familiar, altered sometimes out of all knowledge, while in the cadaver he witnesses the gross manifestations of disease. If his course is well ordered, however, he will also be given an opportunity of studying pathology in the living. Prof. Dean, of Cambridge, has said with truth, "Pathology, if it is to be the useful reality it ought to be to the student and graduate, must be learned in the wards, as well as in the post-mortem room and the laboratory." This, therefore, is a very interesting stage in the journey through the maze, for the student comes in contact for the first time with the living patient, and he also handles and sees the human shell from which the vital spark has but recently fled.

Preparation for Clinical Work.

It is true that if, like a wise man, he has taken some more of Sir Arthur Keith's advice, he will have already attended an operation or two in order to extend his anatomical experiences, but that is not quite the same thing as standing by the bedside of a patient and noting, perhaps, how yellow is his skin and that there is an ominous fullness in the right hypochondrium below the costal margin. This first incursion into wards and dead house cannot fail to leave its mark on the student's mind. Well it is for him, if now, and later when his clinical work commences, the humane side of him comes uppermost. There is a type, hard and keenly scientific, which comes to look upon the patient as a case, even as a museum specimen. This type may make a good pathologist, but he will never be a great doctor. No man can be a successful clinician if he is void of sympathy, and if he does not consider his client both from the psychical and the physical standpoint.

One cannot follow this section of the maze throughout all its ramifications, but the student will find once again that chemistry comes into the picture, and that from the diseases of the lower animals he may learn much that has a bearing on human pathology. "Drugs," in the old sense of the word, have gone out of fashion. We live in a world of tablets, of vaccines and sera, of endocrine preparations, of diet restrictions. We have harnessed the sun to our own uses, and even imitate the lord of light. Electricity and radium are drugs nowadays, and there are various other developments of which the student must have more than a smattering. Thirty or forty years ago he found the materia medica part of the maze simple enough but more than a trifle dull. Now he certainly cannot complain for lack of variety and presumably he appreciates the fact that both pharmacology and therapeutics are linked up with his previous studies, and most strongly linked by the biological chain. And so, gradually, in some ways almost insensibly prepared for it, the student reaches the most fascinating but the most intricate part of the maze of medicine. In some of the British schools he passes first of all through a kind of intercepting chamber, devoted to purposes of coördination, a place where he gets a breather before his final plunge, can take stock of his surroundings, and of his past, and not only have a refresher course in anatomy, physiology, and pathology, as applied to medicine and surgery, but undergo a short period of training in clinical methods, including case-taking, to fit him for his immediate duties. In my day at Edinburgh this took the form of what were called clinical tutorials, which were held in the evening, and the students found them most helpful, even though they did not precede, but were concurrent with, the work in the wards. Now the idea has undergone great expansion and modification, and it must be infinitely easier for the student to approach the bedside. In the old days some of us, young and callous, suddenly plunged into surgical wards as dressers in our second year of the maze, felt uncomfortably like humbugs, and, though possibly we did no great harm, it is unlikely either we or our cases derived much benefit from the contact.

At this stage the student, unless warned, is apt to forget that he is no longer dealing with disease as a separate entity, but with disease which has invaded not only the human organism, but a personality. He must be taught to think not in terms of the disease but of his patient, and for that purpose he must realise that the person, now sick, is a product of his past environment, which has probably been complex, and that the patient, himself complex, may, or probably will, so modify the disease which has laid

hold upon him that its bold outlines as recalled from pathological studies will no longer be apparent. If he does not grasp the significance of this truth, and still more the fact that vital processes control drug actions, he will certainly go astray, especially when he starts to treat his cases. In this part of the maze he will, so to speak, bump up against both in-patients and out-patients, and he will also learn the value of nursing and of the efficient nurse. Not a few medical students regard the staff nurse with respectful awe second only to that in which they hold the "chief." The same feeling, however, does not usually extend to the probationer.

What of surgery? I remember it was quite a considerable time before I plucked up courage to go and see an operation, even though I hail from Scotland and had paid a hospital fee! Eventually I selected for my first plunge an enucleation of the eyeball, which I witnessed (save the mark) from a back seat in a large theatre. I take it quite a few students suffer from a similar timidity. What saved me was an amputation of the leg, which had perforce to be performed on an accident case during a crowded out-patient clinic from which I could not escape, and what helped me through the ordeal, for such it seemed, was my knowledge of anatomy. Here is an illustration of another way in which the value of linking subjects together can be manifest. Pray pardon these personal reminiscences. I make use of them only to give point to the arguments advanced.

In connexion with his surgical course the student is now trained in the nature and use of anæsthetics in a manner which did not previously exist. To many a man this must come as a boon and a blessing. It is no use, indeed, it is fatal, to leave any branch of practical work to the student's own initiative. There are some who have none, there are others in whom diffidence masters initiative, there are yet others who are the slaves of slackness.

THE MAZE THICKENS.

It is now that the student discovers that he must begin to reason in a way he has never done before. He finds himself up against most difficult problems, and very soon discovers that guessing is dangerous. He has to proceed along definite lines of inquiry and exclusion, and, as he does so, he will find again how all his stores of knowledge can now be drawn upon as occasion requires, and if he has the necessary breadth of vision it will be apparent to him why he has had to struggle so long in the intricacies of the maze, and he will begin to feel that not far off he will round the last corner and be free. He is fortunate if, once he has made some progress in his clinical studies, he gets a chance to put precept and observation into practice as, say, in dispensary practice under supervision, where he comes into contact with his patients in their own homes, and learns more of human nature, its makeshifts, trials, sorrows, vices, and virtues, than he can in any hospital ward or out-patient department. There, also, perhaps, for the first time he will get some inkling of social problems and realise the need for safeguarding the public health. Dispensary practice or no, he will have to visit the humble homes when he attends obstetric cases, and it may be said that almost a new world opens to him when he enters, perhaps fearfully, that part of the maze which traverses the fields of midwifery and gynæcology. To many a male student this is a difficult and not altogether congenial part of his wanderings, but possibly that is because there has, in the past, been a comparative failure in the methods of teaching it. How this may be remedied is set forth by Newman in the second of his treatises and, as I must return, though briefly, to the subject a little later, I need not here say more. My own experience is so limited that it is scarcely fitting that I should enlarge upon the theme.

I think most students enjoy the short course in medical jurisprudence. There is an element of the dramatic in it, with tragedy well to the fore. Quite apart from its medical aspects, which can be rendered very impressive if linked up with the work of a police surgeon, the student, now probably approaching man's estate, has an opportunity of learning something about the machinery of law, and criminal law is infinitely more interesting than public health legislation, concerning which at this time he also gets an inkling.

He is fortunate if he gets more than an inkling into the huge subject of preventive medicine. However, even at this late stage in his medical career, he may have an opportunity of grasping the cardinal facts that curative and preventive medicine cannot be divorced from one another, and that, as a practitioner, he will have duties both towards his patients and the State which it is imperative that he should fulfil to the best of his ability.

THE STUDY OF SPECIAL SUBJECTS.

No good object will be served by talking about the study of special subjects, amongst which one does *not* class diseases of children, for that should be an integral part of the medical curriculum. In practice perhaps half the doctor's patients will be "sick kids," and as, for the elucidation of their complaints, it is necessary to know how to approach and handle them, and as there are maladies peculiar to childhood, and as ordinary diseases assume in children forms different from those they present in the adult, and as the doctor must treat the patient and not the disease, it seems criminal to grant a medical degree to any man who has not been instructed in pediatrics. Furthermore, the contact with child life is for the student a useful, and let us hope, usually a beneficial experience which will stand him in good stead in years to come.

As he emerges into the open ready for cap and gown, degree, or diploma, relieved, but with a new sense of responsibility, it will be to his advantage if he realises he has only escaped from one maze to enter another, one more spacious, perhaps, but none the less puzzling, and it is a maze likely to last him all his life if that be passed in the practice of his profession. Yet before he enters it I think it would be well if he were conducted into an annexe to the original maze with the words "History of Medicine" placed above it, an annexe where he might profitably spend a little time in study and from which he would come a wiser and more humble man, able and willing to subscribe to the words of England's last great Poet Laureate:—

> "Yet I doubt not through the ages one increasing purpose runs
> And the thoughts of men are widened with the process of the suns."

THE PREVENTIVE IDEA AND ITS APPLICATIONS.

You will remember how, in the second place, it was proposed to discuss how Sir George Newman's idea of permeating the medical curriculum with the preventive idea could best be carried into effect. In the short time at my disposal I can, of course, merely touch lightly on the subject which is one of considerable complexity and difficulty. Newman's plea has found support both in Great Britain and the United States, but, in one respect, the younger country has gone further than the older, for, in the person of Prof. W. S. Leathers, the Vanderbilt University, Nashville, Tennessee, aided by a grant from the Rockefeller Foundation, has appointed someone charged with the duty of superintending the permeation. I had an opportunity of talking things over with Prof. Leathers when he was in London, and it was clear that all would not be plain sailing. The medical student of to-day has so much both to ingest and to digest that it is very easy to overload the curriculum and precipitate a crisis. Again, in some instances we have to do with "blind leaders of the blind." The teachers themselves are not fully versed in preventive principles. How Prof. Leathers has faced his problem I do not know. I only wish he were here to tell us. I think the difficulty of inculcating the preventive idea is easier at the beginning of the

medical course than during its later stages. In this part of the maze one can see here and there strands of another guide-rope than that marked biological. In other words, at present, in subjects like physics, chemistry, and zoology the instructors draw some of their examples from matters closely concerned with the public health. Many of the principles they enunciate play a part in preventive medicine, and sometimes all that may be required is to lay stress upon them from the standpoint of the hygienist, remembering that under the title hygenist the student and exponent of sociology and eugenics is included. The teacher of physics can easily direct the student's mind along preventive grooves, or, to keep to our original simile, see that he grasps the new guide-rope in the maze. When he teaches the use of meteorological instruments he can discourse on the prophylactic uses of climate, when he expounds certain laws of humidity and air movement he can remind his hearers of what adequate ventilation means to health, especially, perhaps, in certain industries, when he touches upon hydraulics he can find useful illustrations from engineering practice in water-supply and sewage disposal. During the study of electricity he may cite the effects of electrical disturbance upon white men in the tropics, and the beneficial effect of thunderstorms. Under dynamics he can consider the human body as a machine and show how certain exercises will ward off certain deformities. These are but a few suggestions. It is evident that they can be multiplied but never *ad nauseam*, for any sound argument which will impress upon the student thus early the value of prevention of disease is to the good, and, in any case, it is likely to make his physics more attractive and his study of public health easier when he comes to it.

Chemistry, both inorganic and organic, offers a good opportunity to the apostle of preventive medicine. Take the dangerous trades and the use of poisonous substances in various kinds of industries. A disquisition on the prevention of lead poisoning can be made full of interest and at the same time furnish chemical instruction of value. A subject like your tetra-ethyl-lead problem in the States might be turned into a useful lesson. Excellent prophylactic ideas can, as they say in the States, be "sold" the student during a consideration of the chemistry of air and water. The mercurials and organic arsenicals can be made to furnish a sermon on the prevention of venereal disease, though, perhaps, this is dangerous ground over which to lead a student in his first year of medicine. Yet if the lay public are instructed, why not the youthful disciple of Æsculapius? The chemistry of carbon conjures up coal and smoke, and at once smoke-prevention and all the lessons to be learned from it give zest and life to the lecture. These are very obvious directions, probably to some extent exploited at present, but there are other avenues. What of the lime salts and questions of dental hygiene and the warding off of rickets? What of preservatives in food? What of nitrogen in sewage sludge? What of chemical substances, like Schweinfurth's green and "stoxal," used in the destruction of insect vectors of disease? It is, of course, inexpedient to give lengthy disquisitions on these subjects. They should be used as an electric torch is used to illuminate and to show what lies ahead. It is like the art of the impressionist, but, if properly practised, it should not fail of its effect.

In zoology it is easy to find themes, but in a more indirect way, perhaps, that is to say by a careful selection of types during the study of which reference can be made to their importance in medical work and indications given of how their ill-effects can be obviated. As examples take under the protozoa, the amœbæ; under the insects, the mosquito; under the helminths, the hookworm. As a matter of fact, there is at Edinburgh University, for the third-year student, a special short course in medical entomology and parasitology, which affords abundant scope for talking about prevention. But in zoology there are other ways of spreading the gospel of prevention. The rabbit is one of the types always in evidence, and there can be no harm in telling the student about the discovery of tularæmia, and how its spread may possibly be checked. His interest in the rodent is likely to be quickened thereby. Similarly, if he dissects a mollusc like a mussel or a snail, he should be told, on the one hand, how edible shell-fish may spread disease and how they can be safeguarded, and on the other he may learn the important rôle of certain water snails in some helminthic maladies, and how snails can be slain with copper sulphate, if indeed he has not already learned this fact during his chemical studies.

At this early stage the thing must be carefully done, or the student will be crammed with ill-digested facts, and will become the prey of that half-knowledge which is so dangerous. As a forgotten poet once said:—

"Be ignorance thy choice where knowledge leads to woe."

Botany does not lend itself so fully to the illustration of the preventive idea, but lessons can be drawn from it, even apart from those suggested by the bacteria which, indeed, are better left until pathology is tackled. So far as tropical hygiene is concerned, botanical knowledge has its uses. There is the question of the flora associated with the prevalence of the tsetse-fly, there is the planting of eucalyptus and sunflower to dry swampy ground, there is the rôle of the Bromelias and other epiphytes as mosquito nurseries, there is the question of mosquitoes breeding in the tops of coconut palms and the action of azolla, lemna, bladder-wort, and other aquatic plants on culicine life and activity. The hygienic uses of certain grasses can be discussed along with the Graminaceæ, reference may be made to the old practice in India of clearing water with the fruits of *Strychnos potatorum*, the value of the water chestnut in averting famine may be cited. The edible fungi will suggest the measures to be taken to avoid the poisonous and inedible, while the transpiration and respiration of plants and the shade properties of certain trees may bring up the subject of aboriculture in towns. Again, is there not the question of the traveller's palm and the baobab with their reservoirs of drinking-water, the barrel cactus of Mexico, and the wonderful Narra fruit of Damaraland which saves the Hottentot there from extinction.

Anatomy can easily be turned into a quarry from which ideas on preventive medicine can be delved and shaped. There is the question of posture and all that it implies. Once again the lime salts come to the fore, and with them and also apart from them the hygiene of dentition. The skin makes a good text, both as regards Besredka's new ideas on immunity and with reference to light and pigment, while chest expansion, the prevention of fibrositis and other forms of rheumatism, the prophylactic value of certain forms of exercise upon muscles, the guarding against eyestrain, and hundreds of other questions hinge upon anatomy.

What is true of anatomy is, of course, even more true of physiology. There is the whole vast subject of industrial hygiene in which physiology plays a prominent, indeed a pre-eminent, part, and to which the student's attention may from time to time be directed with advantage; there are the physiological problems associated with the hygiene of infancy, childhood, puberty, and adolescence. The preventive rôle of hormones, the functions of vitamins, especially in warding off the deficiency diseases, the question of protecting the heart, lungs, and kidneys from strain, all merit attention. Then there are preventive lessons to be drawn from the study of the higher functions and of the special organs of sense. And so on; it would take much too long a time even to mention all the possibilities, but I cannot help thinking that, despite the wealth of examples, it may perhaps prove more difficult to permeate the physiology course with the preventive idea than any other branch of study, and this largely because the

average physiologist is so immersed in the fascination of his subject that he is apt to regard it as the acme of existence, not as a means to an end. Moreover, the type of mind which takes to physiology is rarely that which is attracted by the wider issues of public health, though there are notable exceptions. If, however, the physiologist will look upon his subject, as, in some measure, a combination of the Institutes of Medicine with the Institutes of Hygiene he will have unrivalled opportunities for reminding his class that there is a Latin maxim which says *Qui non prohibet quod prohibere potest, assentire videtur.* "He who does not prevent what he has power to prevent, is regarded as assenting to it."

THE CLUES.

From this part of the maze onwards it is easy to place the new guide-rope in position. The study of bacteriology teaches many lessons in prevention on which we need not dilate. Is not immunity and all it predicates the very essence of prophylaxis? During his pathology studies the student can be led to see, not only how important it is to prevent disease altogether, but to grapple with it at the outset. The history of cancer may be adduced to point the moral. Again, the study of intra-uterine pathology will pave the way for further conceptions later in the curriculum, while he can also be made to see in many instances how the pathological processes of old age may be held in abeyance. Preventive measures in the case of comparative pathology may be cited to good effect, considering that so many parasites and diseases of animals are transmissible to man. Once more the hygiene of industry comes into the picture and, indeed, on every side lie lessons ready for use.

No longer can anyone say that materia medica and therapeutics are the handmaidens of curative medicine alone. They have now a much wider application. Indeed, pharmacology nowadays is as much concerned with the prevention as with the cure of disease. We know that the administration of certain drugs can and does prevent the development of a malady, the virus of which has been implanted in the human body. We know that timely exposure to sun and fresh air is a protective measure of great importance. Psychotherapy is best employed as a form of mental hygiene, while vaccines and sera are, generally speaking, more valuable as prophylactic than as curative agents.

What better example of preventive medicine can there be than the Pasteur method for rabies and its recent application to the dog?

Sanitas sanitatis, omnia sanitas, we see how the slogan can and should sound through the whole maze of medicine. As the student passes to his clinical studies it will become intensified, and, to change the metaphor, he will grasp the new guide-rope with a firmer grip, though still clinging on one side to his biological leading strings.

This address would double in length were I to consider all the ways in which the preventive idea may permeate general medicine, surgery, midwifery, gynæcology, pediatrics, diseases of the skin, and of the other special sense organs, mental diseases and even anæsthetics, for is there not a technique to prevent chloroform poisoning? Much of Sir George Newman's pregnant suggestion has yet to be worked out in detail. Its application will not be simple. It will call for patience and perseverance. I am very conscious of the fact that I have not been able to deal with it in the way it demands. Yet I hope that, at least, I have succeeded in showing in the first place how arduous, yet how engrossing, is the progress through the maze of medicine, and in the second place how, here in the University of Rochester, as elsewhere, it were well to reinforce the biological guide-rope in that maze by one leading step by step, yet ever more directly, to that conception of the prevention of disease which is becoming, if it has not already become, the lodestar of the physician, the hygienist, and the research worker alike. When once this doctrine is established, and not till then, it will be possible to assert that we are doing our best to preach and put into practice a belief founded on that wise saying of ancient Greece, where long ago certain basic principles were clearly recognised:—

"Without health life is not life, life is lifeless.'

An Address

[ABRIDGED]

ON A

HALF-CENTURY'S PROGRESS IN OPHTHALMOLOGY.

Being the Presidential Address delivered to the Section of Ophthalmology of the Royal Society of Medicine on Oct. 8th, 1926,

BY ERNEST CLARKE, C.V.O., F.R.C.S. ENG.,
CONSULTING SURGEON, CENTRAL LONDON OPHTHALMIC HOSPITAL.

[Mr. Ernest Clarke began with a warm testimonial to the learning and merits as a teacher of Mr. Waren Tay at Moorfields, and then passed in rapid review the influence on ophthalmic surgery produced by the introduction of antiseptics and of local anæsthetics, pointing out the danger of the latter which in allaying pain might mask the symptom most disturbing to the subject so that the cause of the trouble is not inquired into. He proceeded to speak on:—]

EYESTRAIN AND CYCLOPLEGIA.

Eyestrain had been recognised and was styled "asthenopia" and practically the only symptom allocated to it was headache. In 1892 I published a book on "Eyestrain," which was very well received and reviewed. I was inspired to write it by the work of Gould, of Philadelphia, and I shall ever be most grateful for undertaking this work as it entailed reading every published book on refraction, and Donder's "Classical Treatise" became my daily companion. Gradually eyestrain has been taking a more prominent place in ophthalmology and general medicine. We now know that there is probably no functional nerve trouble that may not be caused or partly caused by eyestrain; that it enters as a second or third partner in innumerable complaints, and that by preventing it we may indefinitely postpone epileptoid attacks, migraine, recurrent iritis, and possibly delay or postpone the appearance of glaucoma and cataract. We know that eyestrain is more likely to be present with small errors and that in sensitive patients 1/8 D. may make all the difference between happiness and content, or discomfort and unfitness. In certain individuals eyestrain may be one of the frictions of life, and a waste of nerve energy; just as friction is a waste in mechanics. . . . This wasting is very often small, but it is going on during all the waking hours when eyestrain is present and may be imperceptible—that is, no definite symptoms such as headache may indicate its presence, hence it is most insidious. This waste lowers the resisting power to disease both locally and generally, so that the individual exposed to some infection which he ought to be able to withstand succumbs because his fighting power has been lessened. As in these days preventive medicine holds a very high place, the possibility of the presence of eyestrain should always be borne in mind.

There are some who are preaching that cycloplegics are not necessary in estimating the refraction of the eye, but speaking to you with the experience of a life's work I would warn you not to listen to them. Most people under 40 years of age and some under 50 do not, and cannot, relax their accommodation completely so that you cannot get down to the "bed rock" of the real condition of the eye. Donders

preached the value of paralysing the accommodation, and 70 years has only served to strengthen his teaching. It is true that in many cases the atropine or homatropine examination reveals nothing new and the cycloplegic need not have been used, but in my experience these cases certainly do not amount to 25 per cent., and for the sake of the remaining 75 per cent. we must paralyse the accommodation in all young patients. It is, however, important to remember that unfortunately we have a dilated pupil during our examination, and therefore a post-cycloplegic examination is very often necessary before prescribing glasses.

In the discussion on a paper before the Ophthalmological Convention last year by Mr. Burdon Cooper,[1] a good deal was said about the abuse of cycloplegics, but Dr. Hawley, of Chicago, struck the right note when he said the object of the cycloplegic was not so much to find out the amount of hypermetropia or myopia, but the exact amount of the astigmatism, and there is no doubt that very small errors of astigmatism, that mean so much, cannot be fully revealed without a cycloplegic in patients up to 40 or 45. The ophthalmometer may reveal the presence of the defect, but in checking this with the subjective test, which should always be done, you can get no definite answer until the ciliary muscle is paralysed.

MYOPIA AND PRESBYOPIA.

In the treatment of myopia we certainly have advanced. In my young days it was customary to let myopes of, say, 3 or 4 D., do all their near work without glasses, and if the myopia was higher, for instance, 7 or 8 D., 2 or 3 D. was taken off for near work. Time has shown that the ideal treatment of myopia is to correct it fully with any astigmatism that is present, and force the ciliary muscle to do its proper work, and in this manner stay the progress. In the paper [2] I read before the Congress last year, I think I showed conclusively that Sir Arthur Keith was right—that myopia was due to a badly constructed sclerotic and that this was prenatal and inherited. I suggested that this faulty sclerotic might owe its origin to some defective influence of one or more of the endocrine glands. I pointed out that we might stay the tendency to lengthening of the eyeball or retard it by careful refraction, and by preventing undue convergence in the very early years of life.

Presbyopia used to be very inadequately treated—a plus glass generally the same in both eyes and no correction of astigmatism unless large in amount. Now we know that the presbyopic age is just the age when, if eyestrain is present, it does the most harm. The vital energy is less—recuperative powers are less, very often worries and troubles of life are more acutely felt. We must correct the distant vision if an error exists as well as the reading, and the best way of doing this is by making the patient wear bifocal glasses. The improvement in the optician's art has made the way much easier, for the invisible bifocals are a very great improvement on the old-fashioned so-called "Franklin glasses." The reason that many people dislike these bifocals is, I think, due to the lower or reading portion being often made too strong. I find from experience that at no time of life is an addition of more than 2·75 D. needed, and very often up to 65, 2 D. is sufficient to add to the top or distance correction. We must remember these bifocals are for constant use, and if the reading section is too strong objects slightly further removed from the eye, as food on the plate at meals, become blurred. Everything also depends on the correct centering of these glasses and also making sure that the division between the glass should not be higher than the margin of the lower lid.

For many years I have been recording the accommodation power of my patients, and these records now number over 6000. You may remember that I have found that the average accommodation power, age for age, is somewhat higher than Donders put it, that it is a very delicate index of the "physiological age" of the individual, that if a person looks older and is really older than his or her years, their accommodation power is lower than normal and vice versa; that toxæmia lowers it; and the removal of the toxic condition is followed by increased power.

[Here Mr. Clarke enumerated, as proofs of progress, the great changes which have taken place in the treatment of imbalance of the extra-ocular muscles, the additions to methods of diagnosis, and treatment due to X rays, radium emanations, ultra-violet light, and vaccine therapy, as well as to much bacteriological research. He proceeded:—]

RETINAL HÆMORRHAGE.

It is not so very long ago that hæmorrhages in the retina were all labelled *hæmorrhagic retinitis*. As high blood pressure was generally associated with their presence it was supposed to be the cause and bleeding was, in many cases, adopted as part of the treatment. Fortunately for the patient the effect of bleeding was very transitory.

We owe much of our new knowledge on the subject to Mr. Foster Moore. Dr. Dale and Prof. Krogh, of Copenhagen, have also supplied important material. We now know that high blood pressure in the brachial artery does not necessarily mean high blood pressure in the retinal artery; at all events, high blood pressure is as much a symptom as the hæmorrhage and they both indicate a toxic condition of the blood. Dale, in a recent paper, pointed out that Krogh has shown (and other physiologists have acknowledged the correctness of his investigation) that the capillaries have a contractile force of their own under nerve and hormonal control, and that with increased relaxation they become increasingly permeable to the constituents of the blood plasma until, when fully relaxed, they fail altogether to retain it, and the blood passes without hindrance into the surrounding tissue. If hæmorrhage (from its derivation) means a bursting of blood it is not the proper term to use for this condition; one dislikes hybrid words, but *hæmoflux* would be a more appropriate term. Such a hæmoflux would be a very different thing from a large subhyaloid hæmorrhage, or what Mr. Fisher has rightly suggested should be called a semilunar retinal hæmorrhage, from a ruptured blood-vessel. It has been said that a proper classification of retinal hæmorrhages is badly wanted. Foster Moore has recently suggested the following, which seems to me very adequate. He says the leakage of blood occurs: (1) From arterioles from lodgment of infected emboli. (2) From capillaries due to toxins or to the impairment of the nutrition of the endothelium as in anæmias. (3) From the venules from mechanical causes. If the toxins are removed the blood-vessels will be restored to the processes of filtration, diffusion, and osmosis. The blood patches will be gradually absorbed, and if the external limiting membrane has not been penetrated the retina will gradually resume its normal appearance. I recently had a case of a lady, aged 49, whose right fundus was covered all over by superficial blood patches. She was found by Dr. McCrea and Dr. Carnegie Dixon to be toxic from streptococcal and *B. coli* infection. She received a series of doses of autogenous vaccines and in a few months completely recovered with normal vision, and not the semblance of a scar is now visible in the retina. We must remember that the leakage of blood in the retina due to toxæmia may be non-bacterial in origin, as Mr. Fisher pointed out in a very valuable paper on Retinitis in Pregnancy read before this Section some ten years ago.[3]

[Mr. Clarke next noted the connexion of dental sepsis with eye troubles, which is now so widely recognised, as is the influence of congenital malformations and their accompanying pathological changes.]

GLAUCOMA.

In the treatment of glaucoma, to take the place of the sacrifice of a piece of iris, a filtration cicatrix has been substituted. De Wecker, who made the suggestion first, was followed by Lagrange, Elliot,

Herbert, Von Hippel, and many others. From Mr. Davenport's paper on 405 trephine operations at Moorfields for four years in the September number of the *British Journal of Ophthalmology*,[4] Elliot's trephine operation appears to be the most popular for simple chronic glaucoma, and I personally quite agree with this, while iridectomy, introduced by Von Graefe 70 years ago, still holds its own for congestive and acute glaucoma.

The pathology of glaucoma has been taught us in the past by such masters as Priestly Smith and Treacher Collins. Lately, Thomson Henderson has advanced a new theory; that the access of the aqueous to the canal of Schlemm is prevented by sclerosis of the ligamentum pectinatum, as a predisposing cause, coupled with an immediate exciting cause which is vascular. Colonel Herbert has advanced another new theory that chronic simple glaucoma arises mainly, if not entirely, from a defective inward pull upon the pectinate ligament. . . .

[He attributed modern improvements in the treatment of convergent strabismus largely to the enlightenment of parents who bring their children now at an earlier age so that a considerable proportion can be cured by glasses alone. He spoke warmly of the ophthalmic work produced by war conditions, and especially of the preventive labours of Sir William Lister and others in respect of trachoma "hitherto the scourge of armies," and continued :—]

The Career of the Ophthalmologist.

Another great advance that has taken place has been in the education of the intending oculist. In the early days the only eye work was surgical and when the various hospitals established eye departments one of the surgeons on the staff was selected as head of that department. Naturally, the younger men who aimed at specialising in eye work concentrated on surgery and took the Fellowship of the Royal College of Surgeons, the study for which occupied all their time to the exclusion of any deep knowledge of medicine; consequently the proportion of oculists without a special medical degree at this time was *4 to 1*. As the knowledge of ophthalmology increased it became apparent that medicine was as important or even more important than surgery, so that now almost all the younger oculists possess a medical degree and the proportion is reversed. A few years ago Mr. Rayner Batten read a paper [5] before this Section hinting that the time might come when some conscious of not being good at surgery would concentrate on the medical side and call themselves medical ophthalmologists with the prefix of "Dr." which (in London) is not considered to be our correct designation. One great advance in our education has been the recent establishment of diplomas in ophthalmology and the possibility of taking the F.R.C.S., and M.S., of London with ophthalmology. I would, personally speaking from my own experience, strongly urge those who have just qualified and have started serving their apprenticeship as clinical assistants at one of our eye hospitals, to spend at least a year in general practice if they can possibly manage it. The value of this experience is priceless. It will teach them first that the eye is a very intimate part of the body and not a solitary organ; it will teach them how to drop their hospital manners and how to deal with private patients; it will teach them what they are never taught, or certainly in my day were never taught, how to deal with their colleagues and to realise that what is called medical etiquette is nothing more than acting according to the principles of common politeness and doing to others as you would be done by.

Although we cannot point to any great changes in surgical instruments during this long period, our equipment has enormously improved. Whereas the reflecting ophthalmoscope requires a distinct education to enable it to be used efficiently, the electric ophthalmoscope has considerably lessened the difficulties and put into the hands of every medical man the means of viewing the fundus. At first this may prove a mixed blessing but eventually it must be for good. A very great advantage of this instrument is the possibility of examining a patient in any position. On account of being able to approach so near the eye with the instrument, we can get a more extensive view of the fundus through a smaller pupil and a darkened room is not a sine qua non. In association with the ophthalmoscope I must allude to the increased facility for recording pictures of the fundus which has been instituted by Messrs. Hamblin at the suggestion and under the supervision of Mr. Rayner Batten. Such recording will enable us to study different phases of a disease in the same subject at different times and also the same disease in different subjects, and under different treatment, and these collective records will be most valuable for educational purposes.

The latest Meyrowitz's model of the ophthalmometer originally given us by Javal and Schiotz is a great improvement on the old Kagenaar model, and I strongly urge its more extended use, for if used intelligently as a servant, and not as a master, it is a most valuable instrument, saving time in refraction work and giving an accuracy (especially in the estimation of small degrees) that no other method can rival.

Lastly, during the last few years, Dr. Gulstrand has introduced us to the slit lamp. This instrument is surely going to help us in thoroughly appreciating structures and changes in the anterior part of the eye as the ophthalmoscope has done in the posterior region. As it has taken years for us to become acquainted with the latter, so will it probably be years before the slit lamp has yielded us all the knowledge we hope to obtain from it.

[Mr. Clarke concluded by pointing to the recent labours of Mr. Leslie Paton, Sir John Parsons, and Dr. Gordon Holmes on the neurological side of ophthalmology; to the work of Dr. Duke-Elder on ocular circulation; to that of Mr. Fisher and Dr. de Schweinitz in connexion with the pituitary gland, and concluded :—]

We have a grand stimulus to help in this progress when we realise what our work is. Treacher Collins, in his Bowman lecture, Elliot Smith and Sir Arthur Keith have shown us that the development of the area in the brain associated with vision has proceeded pari passu with the development of our physical and spiritual state. We can manage without taste, smell, and even hearing, but with blindness we lose our independence, and in the whole of medicine no part, it seems to me, is so overwhelmingly important as ophthalmology. This consideration should make us always put in good work which at the day's end, or our life's end, will always leave a satisfactory feeling of "something attempted, something done."

References.—1. Artificial Cycloplegia, Trans. Ophthal. Soc., xlv., 386. 2. Genesis of Myopia, Ibid., p. 373. 3. Proceedings R.S.M., Sect. of Ophthal., 1915, viii., 127. 4. Brit. Jour. Ophthal., 1926, p. 480. 5. Proceedings R.S.M., Sect. of Ophthal., 1919, xiii., 11.

Royal Medical Benevolent Fund.—The following are some additional cases relieved at the last meeting:—

Widow, aged 73, of L.R.C.P. Edin. who practised in the south of England and died in 1920. Eldest son, aged 45, allowed his mother £20 a month, but this ceased on his death in January last. Second son not in a position to make regular allowance but helps to the best of his ability. No other income. Voted £36 in 12 monthly instalments.

Widow, aged 54, of M.R.C.S. who practised in Wales and died in 1924. Owing to ill-health quite unable to work. Lives rent free in a cottage and receives the rent 5*s*. a week of an adjacent one. No other means but receives poor relief. Voted £26 in 12 monthly instalments.

Widow, aged 55, of L.R.C.P. who practised in London and died early this year. Late husband was in receipt of an Epsom Pension, the Old Age Pension, and an annuity from the Fund, all of which ceased at his death. Applicant is now looking out for work to maintain herself. The Fund voted £17 since May, and £18 in 12 monthly instalments from Nov. 1st next.

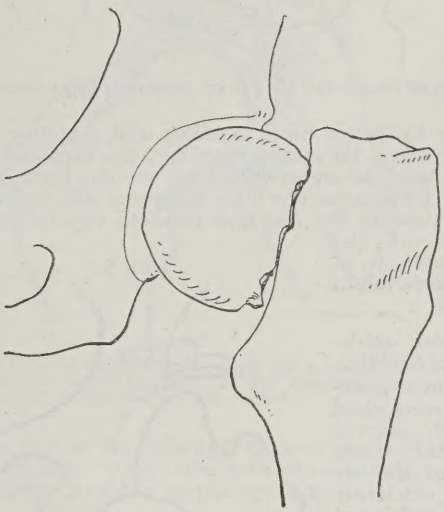
Subscriptions may be sent to the Honorary Treasurer, Sir Charters Symonds, K.B.E., at 11, Chandos-street, Cavendish-square, W. 1.

SOME CONTRIBUTIONS TO THE RECONSTRUCTIVE SURGERY OF THE HIP.*

BY ERNEST W. HEY GROVES, M.S. LOND., F.R.C.S. ENG.,
PROFESSOR OF SURGERY AT THE UNIVERSITY OF BRISTOL.

THE hip-joint, the largest and most important in the body, presents special difficulties and special displacements. It is more liable to serious disease and congenital dislocation than any other joint. Possibly this may be due in part to the evolutionary change from the quadruped to the biped gait and progression.

FIG. 1.

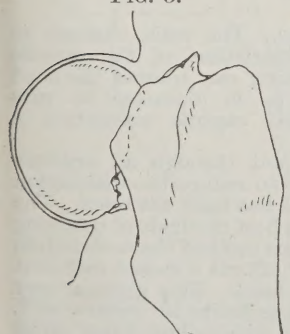


Outline of skiagram of fractured neck of the femur in a man, aged 35, before operation.

Fracture of the Neck of the Femur.

Fractures of the true neck of the femur—that is, of the bone proximal to the intertrochanteric line—present very special features. Unless impacted, these fractures never undergo natural union, and yet if artificial impaction is brought about bony union will occur just as certainly as in any fracture elsewhere. Non-union, which is the natural event in these cases, is due to four causes—namely, want of apposition, poor blood-supply, interposed capsule, and the action of the synovial fluid. Of these, the first two are by far the most important. If efficient treatment is delayed for more than a few weeks marked atrophy occurs in the proximal fragment, and after such an event, perfect restitution either of form or function is impossible. The three essential points in the treatment are: early intervention, accurate apposition, and firm fixation. If these points are observed, firm bony union can be secured in practically all cases whether in old or young.

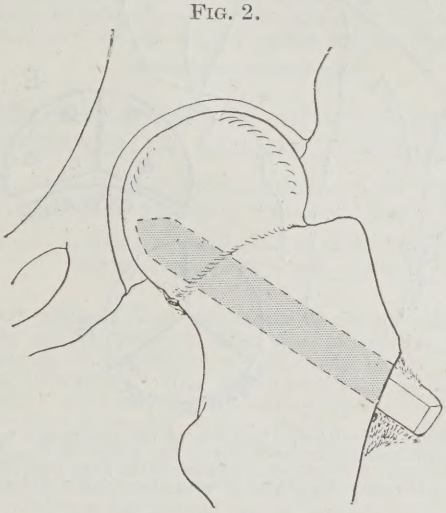
FIG. 3.



Outline of skiagram. Woman, aged 68, before operation.

The method advocated by Whitman is a great advance on previous methods of treatment. Under an anæsthetic the leg is pulled downwards, inverted, and abducted, thus impacting the fracture. The abducted limb is fixed in a plaster spica for three to six months. The objections to this method consist in its uncertainty and the very great torture and tedium of keeping an adult in a plaster case for several months. The uncertain result is due to the facts that manipulation of the leg cannot correct a misplaced proximal fragment, or get rid of that portion of the capsule which may lie between the broken surfaces.

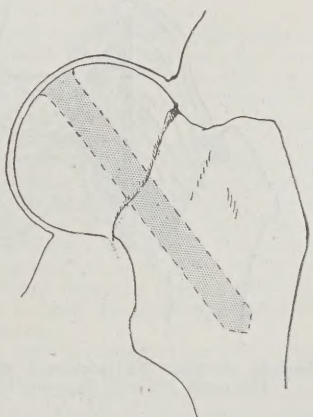
FIG. 2.



The same three months after pegging operation.

Fixing the fracture by means of a bone peg (Figs. 1 and 2) gives a much more certain and perfect union with less strain upon the patience and fortitude of the patient. The joint is exposed by an anterior incision, the capsule opened, the fractured surfaces laid bare, the fracture accurately replaced by manipulation, and a square peg 4½ in. long, ⅜ in. thick, driven from the base of the great trochanter through the neck into the head. The limb is put up in moderate flexion and abduction, steadied by slight traction. In six weeks' time the patient can walk with a caliper, and in three to six months can resume a normal life.

FIG. 4.



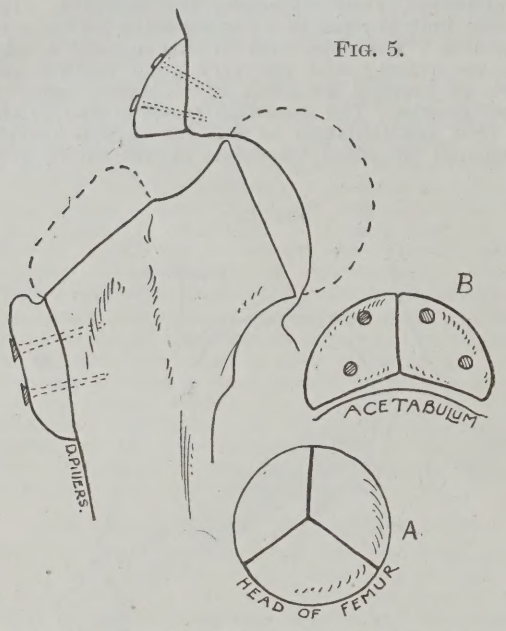
The same after operation. Note that in this case the peg has been driven in from above downwards.

Special modifications of the pegging operation are useful under certain circumstances. The peg may be inserted from above (Figs. 3 and 4). This is useful when the proximal fragment is very small and the line of fracture difficult to expose outside the hip socket. The head of the bone is dislocated and nailed on to the neck, after which the bone is replaced in position.

* Abstract of the Bradshaw lecture, delivered before the Royal College of Surgeons of England on Nov. 11th. The full text will appear in the January number of the British Journal of Surgery.

In old cases, where the fracture is of long standing, it may be useful to employ a living bone peg taken preferably from the fibula, because this type of peg will substitute some new bone in place of that lost

FIG. 5.



Reconstructive operation. The top of the trochanter is fixed lower on the shaft, the acetabulum has a new rim made from the old head. A = method of division of the head; B = method of fixing the shaped portions of head above the acetabulum.

by atrophy. The peg may be inserted blindly—that is, without exposing the joint at all. This method should be reserved for patients whose age or debility makes it desirable to avoid the more serious operation. The drill hole into the neck and the insertion of the leg should be made under the guidance of the X rays. Conditions of slipped epiphysis should also be treated by pegging operation, which is capable of restoring the bone to its perfect original form.

FIG. 6.

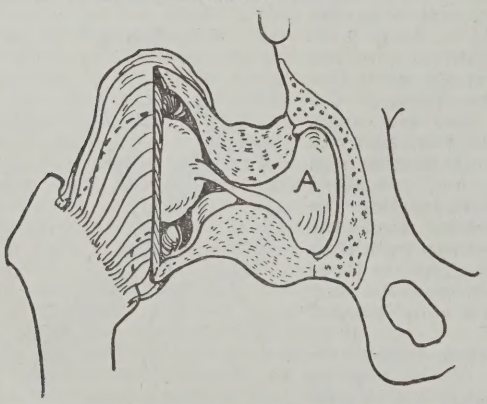
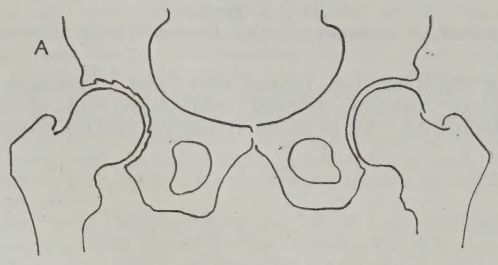


Diagram showing the thickened and constricted capsule as the main obstacle to reduction. A = acetabulum.

Ankylosis of the Hip.

There is no entirely satisfactory method of treating an ankylosed hip. It is comparatively easy to cure the patient of pain and to correct deformity, but it is extraordinarily difficult to secure mobility and stability at the same time, therefore, only those cases are operated upon in which double ankylosis of the hips or simultaneous ankylosis of the hip and knee make some treatment imperative. The more complicated methods of arthroplasty tend to leave the patient with a very stiff hip. It seems better, therefore, to be content with some modification of excision of the head of the femur. Two suggestions are made

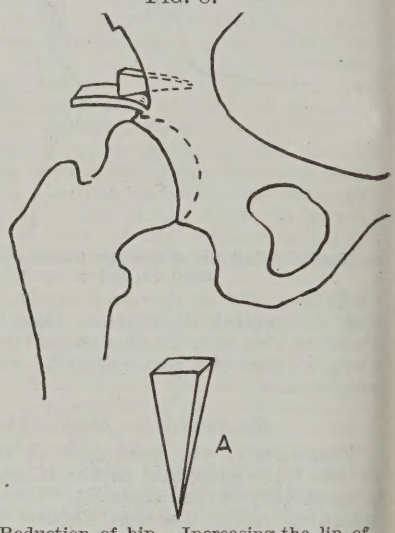
FIG. 7.



Reduction of congenital hip (A) by deepening the acetabulum.

in order to secure both mobility and stability after this excision. To attain mobility, the capsular ligament is used as an envelope for the cut neck of the femur. To prevent the bone becoming dislocated the excised head of the femur is cut into two fragments and affixed to the upper margin of the acetabulum (Fig. 5).

FIG. 8.



Reduction of hip. Increasing the lip of the acetabulum by a bone flap from the ilium. A = ivory peg for propping the flap.

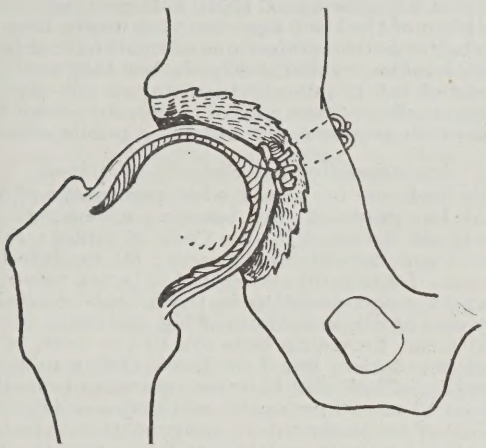
Congenital Dislocation of the Hip.

It is now generally recognised that early cases of congenital dislocation of the hip can be efficiently treated and cured by manipulation. But it is not realised that in older children when manipulative reduction is impossible, a great deal can still be done by open operation to get firm and useful hip-joints. It is worse than useless to use elaborate and difficult methods of manipulative reduction in these older cases. The main obstacle to reduction is the tight constriction of the capsule (Fig. 6). No force or cunning can compel the head of the femur measuring 1 in. in diameter to pass through a thick constricted capsule presenting a channel of about $\frac{1}{4}$ in.

Open exposure of the joint through an anterior incision makes it quite easy to reduce the dislocation after the constricted capsule has been slit open. The problem then arises as to the best methods of retaining the femur in its socket. In one method the acetabulum is deepened (Fig. 7), until it affords a socket sufficient to take the whole femoral head. This gives a very secure joint but one which is liable to become stiff. In another method, that which has been most frequently used, the cartilage of the acetabulum is left undisturbed and a new rim is added to the socket by turning down a part of the outer surface of the iliac bone (Fig. 8). In a third method the capsule is cut from its attachment to the pelvis and tied round the head of the femur, the acetabulum is gouged out, the head of the bone wrapped in the capsule is placed in the socket and anchored there by stitches which fix the capsule to the floor of the acetabulum (Fig. 9).

In the late or adult cases of congenital dislocation a great deal can be done to cure both the pain and the lameness by a subtrochanteric osteotomy, putting up the leg in full abduction. But this is only suitable for unilateral cases. When the dislocation is bilateral, the head of one femur can be brought down into the socket by removing about 2 in. of the shaft of the bone below the small trochanter. This will give

FIG. 9.



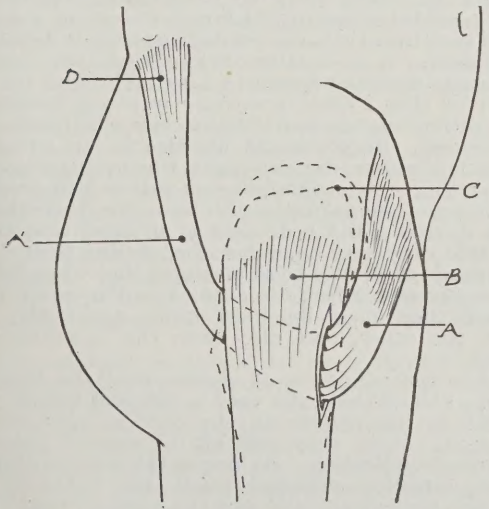
Third type of operation in which the acetabulum is deepened and the head enclosed in the capsule. The capsule is sutured to the floor of the socket.

a firm hip on one side and the two legs will be of the same length. At a later date, if necessary, an osteotomy may be done on the opposite side.

Infantile Paralysis Affecting the Hip Muscles.

Extensive infantile paralysis of the lower limb can to a large extent be made good by means of apparatus

FIG. 10.



New abductor muscle. A = tensor fasciæ femoris; A' = iliotibial band, brought through the trochanter and fixed to erector spinæ; B = outer surface of trochanter covered by origin of vastus externus; C = top of great trochanter; D = erector spinæ.

which fixes and controls the knee- and ankle-joints, but paralysis of the gluteal muscles leads to a complete inability to balance the trunk upon the leg and necessitates the permanent use of crutches. It has been suggested that the lost abductors may be replaced by using the tensor fasciæ femoris or the erector spinæ muscles. Neither of these muscles singly can make a very efficient abductor, partly because one lies in front and the other behind the required line of action, and in the case of the back muscle because of the difficulty in getting a necessary tendinous insertion. By combining these two muscles an efficient digastric abductor of the hip is formed. A long incision is made on the outer side of the thigh; the iliotibial band is isolated and cut above the knee; the fascial band forming the tendon of the tensor muscle is brought backwards through the base of the great trochanter; the erector spinæ muscle is exposed by a vertical incision and the lower portion isolated by cutting through its lower origin and splitting this part of the muscle upwards for about 4 in.; the iliotibial band is brought backwards and upwards through a tunnel under the skin and fixed to the isolated part of the erector spinæ muscle (Fig. 10).

THE MANAGEMENT OF INFECTIOUS DISEASES IN BOARDING-SCHOOLS.

Being a Presidential Address delivered before the Society of Medical Officers of Schools on Nov. 12th

BY A. I. SIMEY, M.D. CAMB., F.R.C.P. LOND.,
MEDICAL OFFICER TO RUGBY SCHOOL.

THIS address does not claim to be an exhaustive review of the rules dealing with infectious diseases in schools, a model for which exists in the Code of Rules published by this Association. Different schools, I am aware, differ somewhat in their regulations—for example, some regard the incubation period of mumps as extending to 28 days, whilst others put it down as 26, or even less—but I take it that the Code represents fairly well the principles on which our regulations are based, and my remarks will deal more or less with what you may see recommended there. My aim is merely to open the question and provoke discussion, for I believe that some of you have a desire to see the Code modified or amplified in various details in accordance with the trend of modern thought and requirements.

It will be helpful to approach the subject from two main aspects: (1) The means taken to prevent the introduction of infectious disease into boarding schools. (2) The disposal of patients suffering from infectious ailments at school and the best methods of preventing the spread of infection, when it has once manifested itself.

Quarantine and Disinfection.

It is occasionally urged against the authorities of boarding-schools that whilst they insist on strict rules as to notification and quarantine for boys exposed to infection at home, they do not do unto the parents as they insist that the parents shall do unto them, in two respects: (*a*) Sometimes they are not punctilious enough in notifying parents that their sons have been exposed to infection at school, or that such notification is not as helpful as it might be to enable them to make arrangements for quarantine at home. (*b*) Whereas the school authorities refuse to allow a boy to return to school within the quarantine period, they do not hesitate to send him home directly term ends, even though it is likely that he will develop the infection soon after his arrival home.

The answers to these two criticisms are: (*a*) That great care should be taken that the school authorities formally notify parents *as early as possible* before the dispersal of the school for holidays, giving as much information as may be reasonably expected to enable the parents to make suitable arrangements for quarantine. (*b*) That it is not reasonable to keep a boy back at the end of a term to prevent his illness occurring at home; for, if a boy *has* to be ill, home is the more appropriate place for him. I hardly think it necessary to go further and point out that it is essential that the school premises be empty during holidays for cleansing and ventilation after a term of epidemic illness.

Critics should also recognise that it is a much more serious matter to introduce infection into a big school of pupils living in common day and sleeping quarters than it is to introduce it into a private house where, in addition to ampler accommodation, the susceptible individuals are fewer and more easily isolated from one another.

If it is agreed, to begin with, that every precaution must be taken to keep infection out of our schools, then I do not think that the usually accepted rules of quarantine in cases of exposure to infection during the holidays can be made much less stringent; on the contrary, I think that even more stringent rules should be laid down about common catarrhal affections, and that, at present, a special certificate should be required to the effect that, after due inspection, there is no sign of certain skin affections such as tinea cruris, impetiginous spots, and boils. But I do not think that it is necessary to insist on the full quarantine period "dating from the day of disinfection," except in the cases of diphtheria and scarlet fever. Even in these diseases I doubt the efficacy of disinfection of clothes, except by steam, but it gives some people a sense of security. To my mind, it is the condition of the nasopharynx, and not the clothes, that matters; externally situated, the virus of most exanthems dies down soon after leaving the body of the host, and rarely recovers, unless reinstated under optimum conditions, such as seldom, or never, occur normally.

There is, however, one point on which I should like to see agreement—viz., that inasmuch as a second attack of the scheduled exanthems is very rare, a pupil who, during the holidays, has been exposed to a given infection, provided that he himself has at some time in his life suffered from a well-marked attack from this infection, should be allowed to return to school without any delay, and, except in the case of diphtheria and scarlet fever, without disinfection of his clothes.

I believe there is very little danger from the clothes of persons exposed to infection, and that infectious diseases are rarely spread by the clothes of contacts. How rarely do we see them transmitted by medical attendants. Exceptions to this rule are, perhaps, diphtheria, scarlet fever, and chicken-pox. To sterilise clothes, disinfection by steam is the most, if not the only, certainly efficacious means, and should be adopted in the case of the two former infections. Chicken-pox is so mild a disease, and may have so long an incubation period, and spreads so much less readily than most other infections, that, in my opinion, it should be removed from the list of scheduled infections in our boarding-school regulations. I would likewise remove rubella, were it not that there is sometimes considerable difficulty in its diagnosis from measles and scarlet fever, and that it is a most rapidly spreading infection.

Unfavourable Results of Prevention.

It is an unfortunate result of the present precautions taken to prevent the introduction of infectious disease into boarding-schools that a great number of boys pass through private schools without having contracted, say, for example, measles. In the public schools similar precautions keep the disease out for two, three, four, or more years until a very small proportion of the community is protected by a previous attack. Then, when finally infection creeps in, a really great and serious epidemic is started, each round of which is greater and more serious than the last, until a time comes when the rounds cannot be distinguished and, for want of sufficient accommodation, patients in early and later stages of illness have to be nursed together, the wards, perhaps, are so full that they cannot be cleared, ventilated, and cleaned, and complications arise, which turn an epidemic into a nightmare.

I sometimes wonder what would be the result of entirely abolishing our code of holiday quarantine precautions and allowing infection to enter schools more frequently, but in smaller outbreaks, spreading the incidence, so to speak, over a number of terms instead of crowding an unmanageable number of cases into a few terms at long intervals.

Personally, I believe it would make but little difference in public schools if we *did* abolish our precautions, so long as the preparatory schools continue to offer so impenetrable a barrier to the introduction of infectious diseases, and, no doubt, it is *their* best policy so to do; but regarding the interests of the scholars, it is better for them to have their infectious diseases apart from a large congregation of children of the same age—in other words, they had much better get their infectious ailments over at home. If they *must* have them at school, then they are better contracted before puberty than during puberty, and in the smaller community of a private school than in the much greater community of a public school.

Accommodation for Sickness at Schools.

This leads me on to ask what percentage of beds should be provided by boarding-schools, as this point is not discussed in our Code of Rules: (*a*) for surgical and non-infectious cases; (*b*) for infectious diseases. I am quite aware that it is not reasonable to expect accommodation in the school hospital for every case of illness in times of big epidemics, for this would mean providing beds for 40 per cent. of the school population, but I do think that a minimum percentage of beds should be recommended (something between 10 and 20 per cent.), and that a certain small number of these should be assigned to surgical and non-infectious cases, isolated, as far as possible, from those containing infectious cases, although, when an infectious epidemic has established itself in a school, there comes a time when almost every individual member of the community and every school premise has been exposed to the infection, which is ubiquitous.

This may seem to be somewhat of a digression, but in reality it is the link between the two main headings of my paper and an introduction to the consideration of the treatment and prevention of spread when once an infectious disease has manifested itself; for it is obvious that to attain this end, if indeed it is generally attainable, there must be a sufficient number of single-bedded rooms in which patients can be watched until such times as a case under suspicion is definitely diagnosed. It is equally obvious that there should be ample accommodation of a suitable kind for the sick; by that I mean good airy wards of a suitable size, with proper up-to-date lavatories, sick-rooms, and bathrooms. There should likewise be an adequate number of nurses, day and night, who must be capable of exerting a strict discipline as well as being skilled in their professional duties; for these, too, there should be a dayroom and bedrooms so situated that those on night duty may be undisturbed during their sleep. The wards must also be so arranged that when two or more separate infections occur simultaneously in a school they may be kept quite apart the one from the other, and also from the non-infectious wards.

As to the admission of visitors into the infected wards, I think that rules vary in different schools, but I find no instructions in our code on this knotty question. It is very difficult to suggest rules of universal application. So long as the number of cases of any infectious disease is small—i.e., in the case of the first patient affected and the second round—i.e., those infected by him—I think it wiser that no visitors should be admitted, although I believe that it is most improbable that they will carry infection on their clothes. Of course, boys should never be permitted to visit their friends whilst still infectious, but a housemaster or his representative, provided that he himself has suffered from the disease in question, should be allowed to pay a short visit once a day at such a time as is chosen as being most convenient by the matron of the sanatorium. It is important that her approval, or that of a nurse deputed by her, be asked before a visitor enters the ward. Whilst in the wards visitors should not sit

down, and should keep at a reasonable distance to avoid infection; their visits should be very brief.

Convalescence and Discharge.

Let us pass on now to approaching convalescence and the time of discharge.

I have already laid stress on the necessity for good bathing facilities. During convalescence each patient should be allowed one or two daily walks and at least one bath a day, special attention being given to the scalp. I believe that he may then be safely discharged, without further disinfection of his clothes or belongings (provided that books are not included in the latter class), except in the case of scarlet fever and diphtheria, when his clothes and bedding should be disinfected by steam and his other belongings (the weak point!) by antiseptics in aqueous or vaporised applications. The present regulations, according to which it is illegal for a patient convalescent after scarlet fever and diphtheria to walk out into the country, should be modified. The places or things that he is most likely to have infected are his dormitory, his various class-rooms, study, chapel, and other premises which he visited *whilst sickening for the disease*, and it is quite impossible to go round all the places he may have visited before his admission and disinfect them.

Fumigation by formalin vapour in such concentration as is usually adopted does little or nothing more than make a sanitary smell and make one feel a false sense of security. Fresh air, wind, and sunlight, when supplemented by the work of a good charwoman, are more efficacious, for soap is itself a good disinfectant.

And now comes the problem as to the day of discharge: our codes of rules err, I think, on the side of extreme caution. I feel that, as a rule, though by no means always, in mild uncomplicated cases a boy is safe to discharge when he is clinically fit to return to school. Thus, whereas in the case of scarlet fever a minimum of six weeks' isolation is usually demanded, there are not a few cases which are fit to discharge at the end of four weeks; the difficulty is to say which are those cases. It is well known that a certain few continue to be infectious, for no apparent reason, long after the usually observed six weeks are over, and I believe myself that the residual infection remains latent in the nasopharynx and may flare up again after a long interval if the convalescent develop a cold.

This suggests a possible precaution in having scarlet fever patients inoculated with an autogenous vaccine taken from the nasopharynx when convalescence begins. Concerning diphtheria I think our present rules, however exasperating they may be, *must* be retained in school work, even though the Klebs-Löffler bacillus, if it persist, be shown not to be virulent. In the case of measles I think a patient is never fit to return to school within 14 days of the full development of the rash, and often not till later.

I have already remarked on the difficulty which sometimes exists in diagnosing the rash of rubella from that of measles and scarlet fever and of other non-infectious conditions. But, once definitely diagnosed, I think that it should not necessitate detention of a patient who is physically fit to return to his work. Patients suffering from chicken-pox are nearly always detained too long, if the usual rules are followed. Given plenty of open air, soap, and hot baths, I believe they are safe when they are clinically and æsthetically fit, care being taken not to overlook the presence of glands.

I see no reason to alter the code rules as regards mumps and whooping-cough, for both of which infections I have more respect than the laity show them, though the actual period of infectivity in whooping-cough is probably short and limited to the catarrhal stages.

Laundry.

There is another practical point which deserves your attention.

The washing, especially handkerchiefs and sheets, of a boy who is admitted to the school sanatorium suffering from infectious disease needs special care. After his admission, linen scraps or the cheapest cotton handkerchiefs should be freely supplied in place of his own, and promptly burnt when soiled; but what about his underclothes and handkerchiefs with which he enters the wards, for they are the most likely to harbour the virus of the disease at its most infective phase. I feel most strongly that these should either be taken with him and washed at a sanatorium laundry, or else should be sent to a special laundry belonging to or set apart from the school, where special arrangements can be taken to keep them apart from non-infected clothes, and on no account should they be sent to private laundries which work for the general public. Indeed, I think that one of the possible sources of infection in a school may be the general laundry, and vice versa, infected school linen may possibly extend infection to the outside community.

Conclusion.

I have purposely refrained from any allusion to small-pox or to the routine use of the Schick and Dick tests in the management of diphtheria and scarlet fever in schools, as I have no personal experience of them as yet, and perhaps it is a little early to pronounce upon their practical utility in schools. In neither case have I yet known any outbreak of such dimensions that one might speak of it as an "epidemic," and I think that scarlet fever is the least infectious of the exanthems in boarding-schools. This is probably due to the fact that a comparatively large percentage of the community is immune to this disease.

To summarise, I feel that we have yet a great deal to learn about infection, especially as to its introduction into a community and its passage from one individual to another, and that too much stress is laid upon direct and indirect contact and too little notice is taken of spray and exhalations from the mouth and nasopharynx.

We are disposed, I think, to trust too much to artificial methods of disinfection, especially by chemical means, and to attack infection too little in its initial stages and too much when it is dying out naturally.

SOME OBSERVATIONS ON SOCIAL CAPACITY.

APPLICATION OF THE PORTEUS MAZE TESTS TO 100 BORSTAL LADS.

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MEDICAL OFFICER, H.M. PRISON, CARDIFF.

THE ultimate problem facing those responsible for the future of the Borstal lad as his time for discharge draws near is well summarised by two questions appearing on the report to be furnished by the Institution, which pertinently inquire, "What the inmate desires to do on discharge," and "What he ought to do." Effectually to reconcile aspiration with capacity is a task of no small magnitude, and great care must be taken lest mere orderly and passive compliance with routine lead to false estimation of the lad's actual capacity to stand on his own, when removed from the atmosphere and guiding hand of the Institution. For the real test, in Tredgold's words, is "the test of life," and "the criterion of deficiency is not an intellectual but a social one."

It is a somewhat curious fact that whereas it is generally readily accepted that the physical weakling—e.g., with tuberculous diathesis or heart disease—cannot reasonably be expected to thrive unless placed permanently under favourable hygienic conditions, it is less common to encounter recognition of the need for a *permanently* "selected" environment to ensure

the safety of those whose weakness is evidenced, not in the physical, but in the mental constitution, by poorly developed social consciousness and low capacity for social adaptation. It is as though the lay mind were capable of grasping that an individual could be born so deficient in *physical* robustness as to mitigate against proper functioning as a social unit, but for some reason finds it difficult to conceive any human being as permanently lacking in the *mental* qualities necessary for effective existence in a modern social state unless, indeed, palpably mentally defective or insane.

Now it would certainly be a sufficiently difficult task to attempt to place all the nation's physical weaklings under perfect environmental conditions, but the problem is infinitely harder when the "weakness" to be combated takes the form of incapacity for adaptation to current social sanctions evidenced by repeated delinquency. Take the physical weakling from slums and mean streets and give him a chance and results are comparatively certain, but the "social" weakling may be placed with great care in circumstances in which 99 other citizens are making good, and when the day comes that his employer leaves a ten-shilling note on the office table for all to see, he alone of the hundred will take it, and most probably, in reply to your questions, he really will not quite know why he has done it. Talk to him long enough and you will no doubt succeed in suggesting to yourself that he took the money because his father was a drunkard or his mother was cross-eyed; because he was the eldest, middle, or youngest, of three and was actuated by some sort of complex; or because he did, or did not, go to the pictures; and you may persuade yourself that you have made an analytical study of the case, with the result that after the lapse of time you will find yourself in a position to prove that anything from collecting bird's eggs to wearing hobnail boots is "a cause of crime." And still, innumerable young people will go on collecting birds' eggs and wearing hobnail boots, perhaps, if they are very daring, even doing both these things at once, and they will never be seen in a police-court. For the truth is, as indicated by Burt, that the delinquent must be approached as a unique human being *with a peculiar constitution*. Because a faulty axle gives way, the chauffeur must not lay disproportionate stress on a few twists and turns and difficulties in the road. The primary fault is in the axle. "Every cause and every influence," says Burt, "no matter what its special form may be, is found to operate, and can only operate, through its inner psychological effects. Conduct, and misconduct, are always, in the last analysis, the outcome of mental life." Now, one cannot have "inner psychological effects" unless there is an inner psychological "something" to be affected. That "something" is the innate mental constitution of the individual.

> "Our days, our deeds, all we achieve or are,
> Lay folded in our infancy; the things
> Of good or ill we chose while yet unborn."—*Trowbridge.*

"Temptation." Mercier tells us, "is strictly relative to the person tempted. Temptation is relative to disposition, and that circumstance which is strong temptation to one is but weak temptation to another, and no temptation at all to a third." If, then, the individual's innate capacity for social adaptation is accepted as of paramount importance, it is reasonable to concede the claim of Porteus, "that so far as mental diagnosis is concerned, the value of any 'test' score lies in predicting how well a person will adapt himself to his social environment."

The fault of the "Binet" scale (and its modifications) seems, in this connexion, to be in the premium which they place upon a purely verbal morality. The young delinquent is accustomed to live by his wits, and the ethically beautiful response he may make to such an inquiry as "what would he do if he had broken something which belonged to somebody else?" may bear no relation to the course he would actually pursue did the circumstances indeed arise.

Burt remarks of the maze tests "it is perhaps in estimating social, as distinguished from educational efficiency, that they will be found most helpful." This is indeed their particular advantage. The very essence of the tests is to stress the value of prudence, forethought, and ability to profit from mistakes, which are fundamental to social adaptability, and accumulated evidence tends to show that they bear a relatively higher average correlation with social capacity and industrial ability. It was for this reason that it seemed of interest to apply them to young men about to take their place in the outside world again, after some two years under training in a specialised environment. Each one had been tested by "Terman" at the time of reception, but the maze tests were carried out under more favourable conditions, since, instead of being at the commencement of what must seem to the youthful mind a long period of incarceration in strange surroundings, the individuals had long since become familiarised with their environment and were rapidly approaching the longed-for liberty. The ages of the lads involved ranged approximately from 18 to 22 years, and the offences committed were mainly, though not wholly, of the "stealing" or "breaking and entering" type. The results, summarised into 13 age groups, appear as follows, viz.:—

Below 5 .. 1	9 to 9½ .. 9	14 to 14½ .. 6
5 to 5½ .. 1	10 to 10½ .. 16	15 to 15½ .. 5
6 to 6½ .. 2	10 to 11½ .. 17	16 .. 5
7 to 7½ .. 3	12 to 12½ .. 19	
8 to 8½ .. 4	13 to 13½ .. 12	

It will be observed that only 16 of the 100 reached the level of 14 and over, as compared with the experiences of Grierson and Rixon, who found an average mental level of 14 years in 200 prisoners tested by "Terman" at Brixton. In no case did any lad achieve a Porteus score higher than his "Terman" level, but in a number of cases the Porteus score was lower. Occasionally, the fall was striking, and at least one case is worth individual mention. The lad concerned reached the level of 16½ years "Terman," but at the mazes could rise no higher than 9. In the Institution he usually produced a favourable impression upon the inexperienced but was not trusted by the seasoned officers. A very short time after his release, his behaviour was again giving cause for anxiety, though he had avoided actual arrest.

It is far from the writer's intention to imply, thereby, that social salvation or damnation is infallibly indicated by the "Porteus" or any other tests, but, from close consideration of the everyday behaviour both at work and at play, of the lads tested, there does seem some ground for believing that in this particular relationship the maze tests have advantages over the verbal types of test. These latter ask the delinquent to state what would be his reaction to certain hypothetical social circumstances, and it is a little ironical that one of the questions put to the candidate is "why should we judge a person more by his actions than by his words?" for "the word of the delinquent," to quote Burt once more, "has always to be verified." The maze tests, on the contrary, necessitate that the individual should act in the face of a concrete situation, in such a manner as must reveal with some faithfulness the presence or absence of qualities essential to social success.

The glib talker may, by the "Binet" scale, produce quite a false impression of his social stamina, and in such cases the additional application of the Porteus tests may materially assist the examiner in coming to the conclusion that the most judicious admixture of sunshine and rain can never turn tares into wheat.

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Clinical and Laboratory Notes.

A CASE OF ATRESIA OF THE VAGINA.

BY ARTHUR A. GEMMELL, M.B., B.CH. CAMB., F.R.C.S. EDIN.,

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CASES of atresia of the vagina (as distinct from cases of so-called imperforate hymen) in association with full development of the internal genitalia are rare. Therefore the following appears worthy of record.

M. D., aged 18, complained that she had never menstruated, but had had attacks of abdominal pain for 14 months. The attacks lasted a fortnight and recur at monthly intervals. The pain is felt in the hypogastric and sacral regions, is so severe that it causes vomiting, but is relieved by hot applications and brandy. The attack in which the patient was seen had lasted two weeks.

On examination she proved to be a poorly developed girl for her age with six digits on the right hand and each foot. The secondary sex characteristics were well marked. There was a mass in the abdomen extending from the symphysis pubis to the umbilicus and the upper part of this felt like the body of the uterus. The external genitals were normal, but what was at first taken to be a vaginal orifice with a hymen proved to be a patulous urethral orifice situated in a more posterior position than normal. There was no vagina. Examination per rectum confirmed that there was no vagina, and showed that the lower pole of the mass, which was cystic, extended to within about three inches of the perineum.

It was considered wiser to attempt to reach the retained menstrual fluid from below, and after it had drained away determine exactly what parts of the sexual apparatus were present and then decide on a final course. Accordingly a transverse incision was made in the perineum below the urethral orifice, but anterior to the fourchette. Blunt dissection was cautiously carried out through moderately firm tissue, the direction being guided by keeping a sound in the urethra and a large dilator in the rectum. Finally the lower pole of the mass was reached and opened and menstrual fluid escaped. A tube was passed along the track formed by dissection and stitched to the vulva. The patient had been having rises of temperature before the operation and continued to have them after. A dilator was passed along the track daily and menstrual fluid escaped, with pus on one or two occasions. Five weeks later discharge from the track had ceased and there was still an abdominal swelling half way to the umbilicus but nothing suggestive of a uterine body, and the whole mass was fixed. During this time there had been no menstruation and no attack of pain.

On opening the abdomen the bowels and omentum were found adherent to the abdominal wall and to one another, evidently shutting off the retained blood which was found in the peritoneum. These were separated with considerable difficulty and during the process about an ounce of pus escaped from a pocket in the region of the right appendage. By further dissection the appendages were freed, the right from its normal position, the left from the bottom of the pouch of Douglas. The tubes were found to be distended with blood and the left open at its fimbrial end. The uterus was enlarged, soft, and retroverted and ended abruptly below in a firm boss, embedded in soft connective tissue. Hysterectomy was carried out, but in attempting to enucleate what was thought to be the lower pole of the cervix from its bed it was accidentally cut through, and as the patient was very shocked and all secreting tissue had been removed no time was lost in dissecting out the remaining plate. Peritonisation was carried out in the usual way but with some difficulty. The dissection from the perineum was found to have opened into the pouch of Douglas and this was kept open as a drain.

On examining the specimen the uterus and tubes were found to be distended with blood and there was a small cap of vagina about half an inch long attached to the uterus. The patient had a somewhat stormy convalescence. Fairly large quantities of pus were discharged from time to time from the perineal sinus, which was kept irrigated regularly, but there was never any suggestion of peritonitis. On examination four weeks after the abdominal operation the perineal track was found to be healed and, per rectum, there was a little thickening in the region of the stump of the right broad ligament. The patient is quite well and free from pain.

As there was definitely menstrual blood in the pelvic cavity in this case it is interesting, in view of Bailey's paper on Endometriomata [1] to speculate as to the future of this patient. Unfortunately none of this fluid was saved and examined for endometrial glands. A search of the literature has only revealed 14 cases of atresia of the vagina combined with hæmatometra, with or without hæmatosalpinges. The treatment in most cases has been abdominal operation. Where perineal drainage has been resorted to first the convalescence has been slow. Successful attempts to form an artificial vagina are recorded in five cases and the technique given by Pfannenstiel and Vineberg [2] appears to be the most hopeful.

PERFORATION OF GASTRIC ULCER DURING X RAY EXAMINATION.

BY F. W. LANG, B.SC., M.B., CH.B. EDIN.,

RESIDENT MEDICAL OFFICER, QUEEN MARY'S HOSPITAL FOR THE EAST END.

THE perforation of a gastric ulcer during a barium meal examination by X rays must be a rare occurrence. It may, therefore, be of interest to narrate the facts of the undermentioned case, in which this untoward incident actually occurred.

Clinical History.—T. W., aged 65, attended the surgical out-patient department of the hospital for the first time on April 19th last. He complained of severe pain "in the pit of the stomach, just like something gnawing at me inside." It had started about two years previously and had been periodic in nature, sometimes leaving him for intervals of up to two months. The pain came on about two hours after food, and, at first, was relieved somewhat by more food. Latterly, however, food aggravated it to such an extent that, although his appetite was good, he was "frightened to eat." During the last three weeks it had become more severe and tended to be persistent. Nausea and retching were increasingly troublesome, and recently some relief was obtained if he "brought anything up," but very little actual vomiting had occurred. Regurgitation of "sour" fluid was, however, frequent. There was no history of hæmatemesis. His bowels were constipated. He had not noticed anything unusual about his motions. His previous health had always been good and his habits very moderate. Despite the increasing discomfort, he had maintained his strength sufficiently to continue at his occupation of boiler-maker till he reported at the hospital.

Examination.—General condition good. Though thin, he stated that he had not lost weight. Slight pyorrhœa alveolaris was present. On abdominal examination there was marked tenderness and hyperæsthesia of the skin just above the umbilicus. Otherwise nothing special to note. A provisional diagnosis of "gastric ulcer" was made. A barium meal X ray examination was arranged for April 21st—i.e., less than 48 hours afterwards. When he arrived on that date he complained that the pain was more severe. The barium meal was administered and a screen examination made. He was then transferred to the table for a plate to be taken. Immediately the pain became more severe and he could not lie still for long. On examination the typical signs of perforation were present—viz., collapse, extreme abdominal rigidity, loss of liver dullness, and rapid pulse. The plate was developed and appeared to show barium escaping from the lower end of the stomach.

The patient was operated on by Mr. A. E. Mortimer Woolf one hour later, and there was found a perforated ulcer in the anterior wall at the pyloric end of the stomach, corresponding to the site disclosed by the X ray plate. There was a quantity of barium under the liver, in the immediate vicinity of the ulcer. The perforation was closed with two layers of sutures and the free edge of the great omentum was stitched over the ulcer for greater security. It was not possible to remove all of the escaped barium. The wound was closed without drainage.

The patient made an excellent recovery and was discharged on May 31st entirely free from pain and from all other symptoms.

I wish to express my indebtedness to Mr. Mortimer Woolf for allowing me to publish this case.

[1] Bailey: Jour. Obstet. and Gyn., Brit. Emp., 1924, xxxi., 539.
[2] Vineberg: Amer. Jour. Obstet., 1906, liii., 511.

Medical Societies.

MEDICAL OFFICERS OF SCHOOLS ASSOCIATION.

A MEETING of this Association took place on Nov. 12th, Dr. L. R. LEMPRIERE, the President, occupying the chair.

The Management of Infectious Diseases in Boarding-schools: Discussion.

Dr. A. I. SIMEY initiated a discussion on the subject of suggested modifications of the rules usually observed in the management of infectious diseases in boarding-schools. His paper appears in full in another column.

Dr. DUNCAN FORBES (Brighton) expressed his general agreement with the opening paper. It was very rare, in his experience, for a third person infection to occur. In Brighton sanatorium there were cases of phthisis, tuberculous joints in young children, scarlet fever, diphtheria, and ordinary infectious diseases. The general nurses attended all these cases, but there had been no spread of scarlet fever or diphtheria to the children affected with tuberculous joints. It was well known that a third person, such as a nurse, might carry infection; when nursing a case of measles the disease might be carried to another child; but as a rule conveyance by a third person could almost be disregarded. In Brighton, since 1910, the disinfection of bedding had been given up, except in hotels and boarding-houses, the practice being continued in those houses when there had been cases of infectious diseases, so as to avoid the risk of an action for damages owing to neglect. Great reliance was placed on a thorough cleaning up with ordinary soap and water. In the case of tuberculosis antiseptic spraying was carried out. Since 1910 there had been no increase in the number of secondary cases in houses in the borough. No spread of infection had been traced to the clothing of scarlet fever and diphtheria patients being washed at the ordinary laundry. In some fever hospitals, however, the linen of scarlet fever cases was washed one day, and that of diphtheria cases on a separate day, but at Brighton no difference was observed, except that the linen left the laundry by a separate door from that by which it entered. He did not consider that in schools special laundries were required for the linen of patients suffering from infectious disease. He was surprised at the importance attached in the book of rules to drains as a danger factor in infectious disease, because the idea that ill-ventilated drains had a malevolent influence was now exploded. He thought much benefit would result in schools if the scholars could be taught simple decent habits of conduct, such as covering the mouth when coughing, refraining from putting into the mouth pens and pencils in common use, and their fingers also; as well as washing their hands before every meal.

Carriers of infectious diseases were often spoken of as healthy carriers, but the oftener such were carefully examined the more they would be found to have some lesion.

Dr. E. ELLIOTT, discussing the question of the conveyance of infection by the clothing, alluded to the importance of the pocket, the recipient of the infected pocket-handkerchiefs, both in a common cold and in any infectious nasal discharge. A clean handkerchief placed in the pocket would soon become contaminated. Was there any simple method of dealing with this?

Dr. E. H. T. NASH emphasised the fact that in the great public schools it was necessary to play for safety, seeing that one was dealing with such a large number of boys. The diphtheria and other carriers who were going about the country he regarded as dangerous. They should only be tolerated outside in places where they were not exposing the general public to infection. He said this though he was well aware that the actual projection of the diphtheria virus did not exceed the distance of three feet. Formalin disinfection, he considered, was efficacious, but it must be done in a moist atmosphere. He always had spraying done as well as fumigation. Having always in mind the need for a good margin of safety in these matters, because of the young and growing population being dealt with, he thought it was rather drastic to start revising the code of rules. He agreed with Dr. Forbes's views regarding drains, but thought the inhalation of foul air so debilitated the system that it became an easier prey to any infections there might be about. He was of opinion that at a future date Dr. Forbes's views would be prevalent in the country generally, but at present many responsible people lacked the courage to apply them practically. It would be well, he thought, to discuss this question jointly with the Society of Medical Officers of Health; then there might eventuate a revision of the book of rules; which was the Bible of the medical officers of schools.

Surg.-Captain P. M. MAY spoke as medical officer of a large school, though not a public one, the scholars of which were drawn from all parts of the kingdom. In that school practically every infectious disease was experienced, and there had been many epidemics. In one large epidemic there were 127 cases of scarlet fever and 107 cases of diphtheria. The Metropolitan Asylums Board were unable to take the scarlet fever cases, and the speaker had to treat them all. There were no fatalities. Diphtheria was so frequently occurring in that school that it was practically endemic. As soon as a case of it was recognised, all the boy's contacts were isolated for 14 days. Scarlet fever and measles, when once started, spread, one would suppose, very quickly, but that did not always happen. All the stipulated precautions, such as sending the clothes to the disinfector, were carried out as a safety course against criticism, though he did not agree with all of them. The record of the school in the matter of infectious disease was good, seeing that many of the boys lived in the crowded parts of Greenwich, where there was a good deal of zymotic disease.

Dr. J. YOUNG said an important question was as to whether more might not be done when the first case of an infectious disease in the school was detected. In measles one was fairly safe until the tenth day, In day-schools, if on the occurrence of the first instance of disease the school was closed for so many days, the children would develop the disease at home and there would be no school epidemic. In the case of boarding-schools, inthe winter-time the football scrimmage must be a potent source of infection.

The PRESIDENT reminded the meeting that the code of rules had been the school medical officer's court of appeal since 1884, and the advice of the medical officer was always being sought concerning disinfection. Hence in seeking to make any changes in the rules it was wise to proceed circumspectly. Still, the rules should be examined critically to see whether, in the light of up-to-date knowledge, they could safely be modified. Their whole object was to prevent the occurrence of infectious diseases, or, if they did occur, to limit their spread. So far the carrying out of the rules as laid down had been, he considered, a failure, and he was speaking with an experience of 3500 cases. In the past ten years there had been more epidemics of all exanthemata than in the preceding 20 years. The total number of cases during those two periods had been proportionately the same. And the percentage of cases among those who entered the school unprotected was about the same now as 40 years ago, except that the cases of rubella had risen 25 per cent. That was the disease concerning which most mistakes were made. Infectious diseases in schools were bound to occur, and attempts at the limitation of the incidence had not been successful, but rather harmful, as the larger the number of unprotected the bigger the epidemics and

the greater their severity. Therefore it was wise to realise how much time was wasted in long quarantine precautions. He agreed that one attack of these diseases conferred immunity against a second attack, and thought that most supposed cases of second attack were wrongly diagnosed. For example, a supposed second attack of measles was often found to be rubella. One could never know whether a case of mumps or one of varicella would produce an epidemic, and his inclination was to abolish quarantine for those two diseases. For a long time he had given up disinfection for scarlet fever and varicella. He agreed as to the importance of looking after the naso-pharynx as a precaution, and supported Dr. Simey's contention that the determining factor as to a boy's fitness to return to school was his clinical "wellness"; but a subject of measles should not be returned to school sooner than three weeks after that illness started. One public school treated rubella as if it were non-existent. The speaker thought that a varicella patient should be kept in for ten days, and when his face was clear school should be resumed. For mumps, three weeks should be allowed, because of the danger of orchitis. Certificates for return to school should either be rigidly enforced or discontinued. Catarrh was a curse of the schools; he included it in his certificates, and that had been a help. He agreed it was worth while to take special care and trouble over the first case of an infectious disease in school, though he had not been able to satisfy himself that it had done much good. He had great faith in the efficacy of a generous use of soap and water. The linen of boys suffering from infectious disease was soaked in disinfectant before being sent to the ordinary laundry, and he had not known of any cases of infection occurring among the laundry staff or their families. The incubation period for measles should be, he thought, 7 to 14 days, that for mumps 12 to 28 days, and for scarlet fever 1 to 12 days. For rubella 7 days from the appearance of the rash should be allowed if there was no persistence of nasal or other symptoms.

Dr. W. G. WILLOUGHBY (Eastbourne) said the code of rules had been of considerable use in giving the medical officer a guide. When he went to Eastbourne he found there were many private sanatoriums or institutions to which cases of illness were sent. He persuaded the headmasters and headmistresses in the borough that it would be better to allow the local authority to build blocks for the reception and treatment of cases from all over the town. It was done, the headmasters and headmistresses, through their association, paying 5 per cent. of the capital outlay. Though the present code of rules in regard to infectious diseases could not be shown to have had a very good effect, something of the kind was bound to exist. He acted in an advisory capacity in regard to infectious diseases concerning about 4000 children, and he had found that the great difficulty in the past had been the parents, because they were so keen on visiting the children in hospital. It was much better now. Recently a large experiment had been carried out in regard to quarantine, 6000 children being involved. In the old days, when a case of infectious disease occurred in a home, the other children were not allowed to attend school. Twelve years ago he removed that regulation, except in the case of infants, stipulating that the child could come to school if he or she had had the disease, whatever it was, previously. Since then the amount of infectious disease had been less than before. With regard to the practice of taking swabs in diphtheria cases, in one period no swabs were taken before patients were discharged, in a subsequent period two or three swabs of each case were taken, and only in the latter period had there been return cases of the disease. But that did not prove that the taking of swabs was not the right course; he believed it was. He quoted a case where small-pox was demonstrably traced to clothes infection; but he agreed that third person infection was very rare and unlikely. He also referred to infection conveyed by books. With regard to drains, he felt it was very important for the public health that drains should be all right; a slight sore-throat when feeling "run-down" could easily be precipitated by proximity to a bad drain.

Dr. W. ATTLEE thought a new set of rules would help to educate the public as to the importance of the disinfection of clothes, and of avoiding seeing their children because of the danger of conveying the infection to others. The idea of the school medical officer had been to play for safety, and in regard to heart disease this had been carried too far, the instructions precluding boys from participating in games and sport. The rules should certainly be made to embrace tinea and impetigo.

Dr. J. LAMBERT thought parents should be advised when their boys were ill, and every boy should be medically examined to ensure that he did not return home in an infectious state. It was found that isolation of a boy and his immediate contacts did not prevent an epidemic.

Dr. N. A. SPROTT would include in the rules regulations as to tonsillitis, influenza, and "pink-eye."

Dr. G. E. FRIEND said that 40 per cent. of the epidemics in his cognisance occurred at the beginning of the term, so that they were possibly started during holidays. He did not doubt that the epidemics occurring during term were caused by visitors. There was, at his school, a fairly numerous day staff, but he had not traced the introduction of infectious disease to them. He did not wish to see any alteration made in regard to certificates. Parotitis should be given a maximum period of 28 days. Boys with rubella were usually sent back to school at the end of a week if there was no discharge from nose or ears.

Anthropometric Graphs.

Dr. REGINALD HANSON exhibited cards for keeping records of the height and weight of children at various ages, both in actual figures and in graphs, such as he had been using for the children in the primary schools of the Duchy of Cornwall. He devised these in response to the wish of parents to keep records of the physical condition of their children from 5 to 18 years. A space in the card was occupied by hints on diet and health.

MANCHESTER MEDICAL SOCIETY

AT a meeting of this Society held on Nov. 3rd Dr. ALFRED A. MUMFORD, the President, took the chair, and Dr. J. F. WARD opened a discussion on

Spastic Paralysis in Children.

Spasticity, he said, was difficult to define, but signified an increase of muscle-tone and was an indication of an upper neuron lesion. The presence of such a lesion explained the loss of voluntary power in muscles supplied by nerves which were affected. Associated with spastic paralysis—in children more frequently than in adults—were athetosis, choreiform movement, and perverse movements. These were explained as due to unrestrained activity of extra-pyramidal tracts following a pyramidal lesion.

In children, said Dr. Ward, spastic paralysis was met with in the following conditions: (1) diplegias; (2) paraplegias of various origin; (3) hemiplegias; and (4) amaurotic family idiocy. The chief clinical manifestation of diplegia was spasticity of legs with adductor spasm; this often was not recognised until the child was several months old. Some mental defect was present in most cases, though very variable in degree. Sometimes, also, there was blindness, either cortical or due to optic atrophy, and convulsions might occur, though not as frequently as in hemiplegia; involuntary movements were also less common. A tendency towards improvement was noted in a large proportion of cases. There were two principal schools of thought regarding the ætiology, said Dr. Ward; the first school attributed the diplegia

to intracranial hæmorrhage or injury, whilst the second regarded it as a result of primary neuronic degeneration. Little had believed that asphyxia was the cause; causes suggested later were: meningeal hæmorrhage (McNutt, Gowers, and Osler); prematurity (Prissaud); and intra-uterine degeneration of neurons (Freud and, later, Collier). Sixty per cent. of the cases were associated with abnormal labour—difficult labour, precipitate labour, asphyxia, or prematurity. The work of Herbert Spencer, Eardley Holland, and others had shown the great frequency of intracranial hæmorrhage in stillborn infants and in those who died shortly after birth. Injury and asphyxia frequently occurred together in difficult deliveries. The hæmorrhage was chiefly intradural and most frequently diffuse, but might be only petechial. Many cases soon proved fatal, but those that recovered might not show evidence of involvement of pyramidal tracts for some months because these tracts developed later. Post-mortem evidence supported Collier's view, but Schwartz had shown that atrophic sclerosis might follow hæmorrhage. Syphilis was not an important cause; the Wassermann reaction was negative in most cases and other symptoms of congenital syphilis were absent.

Infantile hemiplegia, Dr. Ward continued, was probably of quite different pathology in most cases. The onset was generally later than that of diplegia, and was most common between the age of 6 months and 2 years. Convulsions and febrile disturbances were observed at beginning in most cases. These convulsions might be due to the same cause as the hemiplegia, but possibly the hemiplegia was due to a vascular lesion resulting from the congestion during the convulsion. There was frequently a history of infectious disease shortly before onset. Spasticity might be due to vascular lesions, to atrophy or sclerosis, or to porencephalus. Atrophy and sclerosis were probably sequels to encephalitis, and there was some evidence to suggest that this was a polio-encephalitis due to the same organism as poliomyelitis; the evidence, however, was not complete and "encephalitis" was rather a loose term. The treatment of spastic paralysis might be non-operative, by such means as massage and re-education, or else operative. Re-education was most important; massage might soothe hypertonic muscles, but its effect could only be very transitory. Electrical treatment was wholly undesirable. The operative treatment might consist of division of posterior nerve roots (Förster); operations on peripheral nerves (Stöffel); tenotomy; or sympathetic ramisectomy (Hunter and Royle).

Mr. E. S. BRENTNALL dealt with the principles of treatment and emphasised the importance, and in some cases the difficulty, of forming at the outset a fair estimate of the patient's educability. In very young children the treatment had to be left largely to the parents, and should consist of simple stretching of the tight structures and elementary postural training. The use of a foot-splint during sleep was essential, but prolonged immobilisation and splinting were undesirable. Activity and its educative results were of the greatest importance to these children. In older patients treatment should consist of physical training and should aim at developing the sense of balance and the coördination of the child. Both physical and mental improvement could be anticipated in patients who were educable. Operative treatment was directed almost entirely to the relief of contractures. It should only be undertaken in children with a fair degree of educability, and not before promising efforts to stand and walk could be made. Operative treatment in itself, said Mr. Brentnall, did not improve the sense of balance, and might, indeed, interfere with it if the child was long immobilised. The most useful methods adopted were the division, lengthening, and transplantation of tendons, and the Stöffel operation. Different methods would be found necessary in different parts of the limbs. In the lower limb operative treatment in suitable cases could be expected to produce distinct improvement in gait and activity. In severe spastic affections of the hand he doubted whether any tendon operation or nerve section was of real benefit or could restore any degree of functional capacity to the limb.

Prof. J. S. B. STOPFORD confined his remarks to the work done on the sympathetic innervation of striated muscle, reviewing the research of Hunter and Royle and others in this field. After submitting proof of the existence of the sympathetic supply of muscle he discussed the functional significance of the fibres reaching the muscles from the autonomic nervous system. Although, he said, the theory of muscle-tone propounded by Hunter and Royle had been severely criticised, their experimental results demanded further consideration and research; there was evidence that sympathetic denervation had an effect upon muscular activity and it was necessary to investigate fully what that effect was. It might be, as had been suggested, an indirect effect; the researches of Orbelli on the influence of the sympathetic upon fatigue were significant and might lead to a correct interpretation of the experimental findings. Several surgeons, said Prof. Stopford, who had described ramisectomy as of no practical value, had acknowledged some effect upon muscular activity in at least a proportion of their cases. Failure to obtain useful results by ramisectomy must not prevent the following-up of experimental research. For the immediate future it would be wiser probably to confine attention to a careful analysis of the effects of sympathetic denervation, and a review of the present position suggested that this might have far-reaching results.

LIVERPOOL MEDICAL INSTITUTION.

AT a meeting of this Institution on Oct. 28th, Mr. G. C. E. SIMPSON read a paper on

Obstruction of the Duodenum.

Besides ulcer, he said, there were other duodenal lesions which frequently caused indigestion. These included diverticula, involvement by growth or inflammation from neighbouring structures, tuberculous stricture, and obstruction by bands and adhesions from tuberculous lesions outside the duodenum. Cases of congenital malposition also occurred, and in one of these, he said, he had met an appendix which controlled the duodeno-jejunal flexure. After referring to Nagel's case of congenital diaphragm of the duodenum in a patient who survived to the age of 72, Mr. Simpson quoted a case of his own in which a man of 24 had had a stricture, two inches long, and half an inch in diameter, in place of a pylorus. In another patient there was a biliary cyst invaginating the wall of the duodenum from the biliary papilla to the superior mesenteric artery, where it caused obstruction; the cyst contained about 30 ounces of fluid with elements from bile and pancreas and a few stones, and a duodenal ulcer was also present. In these cases the symptoms of indigestion had been chronic but slight for years, and had then become more acute, with dilatation of the stomach. Flatulence had been troublesome.

Passing on to the subject of ileus, Mr. Simpson spoke of a case of chronic duodenal ileus in a girl of 12, which was treated by a belt, and referred to other early cases treated by colopexy. Gastro-enterostomy, he said, had been done in cases where the symptoms were particularly suggestive of ulcer, and where there was marked hyperchlorhydria; most of the patients had been males and the results were good. Of 14 patients treated by duodeno-jejunostomy half were cured or had only slight discomfort; two were done recently and three he considered definite failures. In view of the long-standing history and previous and associated operations, these results were satisfactory. All the cases showed enteroptosis.

Mr. Simpson then went on to consider bands from the gall-bladder and ducts to the duodenum and colon. Apart from adhesions definitely attributable to inflammation, such bands, he said, were common

and they were often the only lesion present where the symptoms were suggestive of duodenal ulcer or gall-stones; in such cases their release was beneficial. Proliferative changes in reaction to strain were responsible for such bands, though often the basis was of congenital origin. Here, again, there was usually enteroptosis.

Mr. Simpson described a case in which there was duodenal delay and prolapse in the obstruction, and appeared to be at the duodeno-jejunal flexure, probably from the duodeno-jejunal band. In general, he said in conclusion, obstruction of the duodenum tended to give a picture with periodicity. The pain was often relieved by food or by hot drinks. Both the intervals and the duration of the attacks were different from those of duodenal ulcer, the attacks being short, and flatulence was a constant feature.

Dr. T. W. WADSWORTH read a paper on the Clinical Significance of Cardiac Murmurs, in which he described the physical factors responsible for murmur production and the various theories about the presence of murmurs where no anatomical or pathological causes could be found. The term "accidental," he thought, should be employed when describing murmurs of this type; they could be qualified by such names as "hæmic" and "cardio-respiratory" when their ætiology was made clear.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

A MEETING of this Society was held on Nov. 3rd, Prof. WILLIAM RUSSELL, the President, in the chair.

Mr. HENRY WADE read a paper on

The Treatment of Tumours of the Urinary Bladder.

He stated that when blood appeared in the urine suddenly, unexpectedly, and painlessly in a person apparently healthy, it was probably due to a tumour of the bladder. Ninety per cent. of all such tumours developed papilliform ingrowths which bled when the bladder contracted, whether they were innocent villous papillomata, malignant papillomata, or primary papillary carcinomata. An exact diagnosis could only be made by cystoscopy or by removing part of the growth with a cystoscopic rongeur. The latter method was occasionally fallacious, as in the borderline case the part removed might be innocent, whereas at the base of the growth definite malignant changes might be present. The appearance on cystoscopy almost always made exact diagnosis possible.

The treatment of tumours of the bladder, said Mr. Wade, was determined by the nature, size, and extent of the growth. There was only one treatment indicated for a benign villous papilloma of moderate size—namely, fulguration. Fulguration of such a tumour should be painless. A local anæsthetic might be used, but, where necessary, it was better to give a narcotic, such as morphia, before examination. The treatment was devoid of risk to life, and could be carried out for the wage-earner without his losing an hour's work. It was especially useful in preventing the development of the secondary daughter tumours, frequently seen after cystotomy. In a few selected cases, a general anæsthetic might be given, especially where the mucous membrane in the neighbourhood of the tumour needed cauterisation. If the slough formed after fulguration was large and not voided, it might form the nucleus of a stone. Where the villous papilloma was of a very large size, it was unsuitable for removal by fulguration, and such cases should be treated by suprapubic cystotomy and removal of the growth. To minimise the risk of dispersing and implanting the cells of the tumour by the necessary handling of the growth, the bladder cavity and later the wound, were filled with a 1-1000 silver nitrate solution. After such an operation cystoscopy should be done at regular intervals for at least a year. If small daughter tumours were discovered, they should be destroyed by fulguration.

For primary carcinoma of the bladder, continued Mr. Wade, fulguration was not to be recommended; application of radium was said to give good results occasionally. The best treatment was to excise the entire growth, if possible. Those on the fundus of the bladder were most favourably situated for such excision, but when tumours were found in this position it was important to be sure that they were not due to invasion of the bladder by neoplasm of the intestine, ovary, or other organ. Where the base of the bladder was involved, partial cystectomy, with the removal of a portion of one ureter, might be done, the divided ureter being implanted into the bladder, or left in situ; the granulating cavity in which it was situated later formed a natural diverticulum of the bladder. Where a primary carcinoma was intrinsic, but could not be removed without excising the entire bladder, this very grave operation was warranted in view of the pain the patient would inevitably suffer without it, on account of recurring painful, spasmodic contractions of the bladder, which grew worse and worse. These contractions persisted after the ureters had been implanted into the loins or bowel, and therefore no palliative operation was possible. When total cystectomy was performed, it was most satisfactory to implant the ureters into the loins, the patient afterwards wearing an apparatus to collect the urine. In the male the prostate and seminal vesicles were preferably removed at the same time. The shock of the operation was not unduly severe. When an improved technique for bilateral implantation of the ureters into the bowel had been worked out, this method would probably be adopted instead. The results of the Coffey-Mayo technique in extrophy of the bladder suggested that it might be safely employed in bilateral transplantation.

A discussion followed, in which Sir DAVID WALLACE, Mr. J. W. DOWDEN, and Mr. J. J. M. SHAW took part.

Dr. STANLEY DAVIDSON read a paper entitled

An Investigation into Non-specific Therapy.

Non-specific therapy, he said, might be defined as the production of a therapeutic effect by the parenteral introduction into the body of some agent which had no biological relationship to that responsible for the infection. To-day there was still great diversity of opinion about its efficacy, and the process by which it produced its supposed beneficial results was still unsettled. It was believed that it might act in three separate ways: (1) by mobilising the defensive enzymes; (2) by producing a leucocytosis; or (3) by the universal stimulation of all body cells. This could only be produced by the intravenous injection of foreign protein in toxic doses. Protein shock must be produced if beneficial results were to be expected—i.e., a severe local and general reaction should follow injection of the protein. It could not be maintained, said Dr. Davidson, that non-specific therapy was in any way comparable to specific therapy as an efficient measure. It was weak in action, inconstant and variable in occurrence, and temporary in duration.

Prof. T. J. MACKIE discussed Dr. Davidson's results from a bacteriological point of view.

Dr. ALEXANDER GOODALL stated that in a small percentage of cases miraculous results were obtained by the use of non-specific agents, either protein or preparations of *B. typhosus;* more might be done to search for that part of the protein molecule which was therapeutically active.

Dr. JOHN EASON claimed that a large percentage of patients with rheumatoid arthritis showed marked improvement, which had encouraged him in the constant use of peptones.

The PRESIDENT had not found such benefits, and considered that peptone-shock was often a definite danger.

After other speakers had taken part in the discussion, Dr. DAVIDSON, replying, agreed that the clinical improvement noted in some cases should encourage further endeavour to ascertain wherein lay the benefits of non-specific therapy.

Reviews and Notices of Books.

THE FUNCTIONS OF THE BODY.

An Outline of Physiology. By V. H. MOTTRAM, M.A., late Fellow of Trinity College, Cambridge; Professor of Physiology in the University of London. London: Nisbet and Co., Ltd. 1926. Pp. 260. 7*s.* 6*d.*

Prof. Mottram points out in the preface to this volume that it arose partly as the result of a determination to give students of medicine at the beginning of their physiological course a bird's-eye view of the boundaries and important features of this science as a preliminary to a more detailed survey. His original conception, however, has been somewhat altered into an attempt to put the modern views of physiologists in a simple and untechnical form in which they could also be understood by a larger public. The volume is now intended, therefore, to serve as an introduction to physiology, not for the medical student only, but also for students of nursing, domestic science, teaching, and massage, and for that section of the general public which is eager to know something of the way in which the body works. The book is divided into eleven chapters, all of which are written with a gift of expression and wealth of example and analogy calculated to hold the reader's attention and interest without imposing upon him the exhausting concentration necessary for the digestion of large modern text-books. The study of function proceeds in an orderly sequence from that of the nervous system, sensory and effector apparatus, through that of food, its digestion, transport, oxidation, and excretion, to an account of the reproductive system in the lower and highest forms of life. One chapter is devoted to a study of the internal secretory organs; and the manner in which the secretions of these glands correlate the various activities of the animal and integrate them into an intelligible and purposeful whole is clearly described. A short summary is appended to each chapter, and references are given to the more advanced treatises pertinent to the subject under discussion.

The salient facts of physiological knowledge have been gathered together in a small compass and have been placed before the reader in an entertaining manner. The result is a volume as delightful as it is informative.

HANDBOOK OF DISEASES OF THE RECTUM.

By LOUIS J. HIRSCHMAN, M.D., F.A.C.S., Professor of Proctology, Detroit College of Medicine. London: Henry Kimpton. 1926. Pp. 403. 30*s.*

THIS volume begins with a practical account of the anatomy of the rectum, followed by details of methods of examination. Among those illustrated is the inverted or Hanes's position for sigmoidoscopy, which must be extremely unpleasant for the patient; the need for it does not seem clear when the knee-chest position is so satisfactory. The motto of this chapter, and in fact of the whole book, is that the slightest rectal symptoms necessitate a thorough examination if mistakes of omission are to be avoided. The technique of local anæsthesia is clearly described; the author prefers a ½ per cent. solution of novocaine, or ½ per cent. quinine-urea in cases where suturing is not required. Sacral anæsthesia, using 30–60 c.cm. of 2 per cent. novocaine is advised for the more extensive operations and has apparently given a high percentage of good results. Constipation and obstipation are discussed and the operation of rectal valvotomy for section of hypertrophied Houston's valves is stated to give satisfactory results in suitable cases. This operation is not generally accepted or practised in this country. In the section on pruritus ani the general failure of treatment by vaccines as advocated by Dwight Murray is admitted. The operation which is recommended of undercutting the perianal skin by two median incisions anterior and posterior to the anus does not impress us as being a good modification of Ball's operation; it would appear impossible in this modification to section the sensory nerves of the anal canal up to the level of the external sphincter, which procedure is the essence of the Ball's operation.

In dealing with the treatment of fissure and abscess certain points made by the author call for criticism. The deep, narrow "trench" which the author leaves after incising a fissure must cause the patient more post-operative pain and difficulty of dressing than the flat, shallow, lozenge-shaped wound. In regard to opening abscesses in the perianal region, the old advice to make a single straight incision, packing with gauze and subsequent daily separation of the skin edges, is here proffered. The wide excision of skin margins leaving a large circular or oval wound is a much better and more certain way, and far less painful to the patient. The chapter on fistula contains some good radiographs of fistulæ after injection of bismuth paste, but for the most part the photographs illustrating this subject are unsatisfactory, and would be better replaced by diagrams. Although the author admits good results with the injection treatment of internal piles, with not more than 25 per cent. of recurrences in from one to three years, he now prefers removal under local anæsthesia as being a more satisfactory and surgical procedure. The technique is described. A chapter on dysentery is contributed by Dr. John L. Jelks. The major operations, such as those for cancer of the rectum, are not described, the book being written solely to describe methods of diagnosis and treatment that can be carried out in the consulting-room. It is unlikely that in this country some of the operations illustrated, such as for prolapse and fistula, would ever be done except in a hospital or nursing home. Perhaps we are fortunate in that our patients are mostly willing to submit to a less ambulatory line of treatment.

This work is particularly valuable in showing the possibilities of local anæsthesia in proctology. In this country many cases of rectal disease operated upon under general would be better done under local anæsthesia. For instance, in operations for hæmorrhoids, post-anæsthetic vomiting may cause the formation of large œdematous tags at the anal margin. Details of the technique used are clearly set out. The book is a record of the views of an expert proctologist which will be read with profit by everyone interested in the subject.

CHRONIC DEAFNESS.

The Treatment of Chronic Deafness by the Electro-phonoïde Method of Zünd-Burguet. By GEORGE C. CATHCART, M.A., M.D., Consulting Surgeon to the Throat Hospital, Golden-square. London: Humphrey Milford, Oxford University Press. 1926. Pp. 88. 4*s.* 6*d.*

Dr. Cathcart begins this little treatise with a good and spirited defence of empiricism, as distinguished from quackery, pointing out that it is possible to cure a disease of which we do not know the cause and that, conversely, to know the causation is not necessarily to know how to cure it. But he rather spoils his case by the overstatement that the members of the medical profession "are often afraid to try a new treatment lest their fellow members should hale them before the General Medical Council for quackery." This is wrong, and Dr. Cathcart should know that no medical practitioner could be so "haled" merely for trying a new treatment—indeed, a section of the Medical Act, 1858, expressly contradicts such an interpretation of the Council's duties.

The first part of the book is concerned with the prevention of deafness; the chief points insisted upon being the more frequent and more thorough removal of adenoids, and the more frequent incision of the drum in catarrhal, as distinguished from suppurative, otitis. The author is on firm ground here, but damages his position with such a sentence as this: "It is also true that adenoids sometimes

grow again, especially if the child gets any of the exanthemata or any diseases involving the naso-pharynx, such as diphtheria or mumps, as the high temperature accompanying these diseases makes the adenoid tissue hypertrophy." There follows a historical summary of the development of re-educative methods, especially that of Itard and the oral method of Urbantschitsch, and the Zünd-Burguet instrument is reached just half-way through the book; a small-scale illustration of the apparatus is included, but a diagram on a larger scale would have been a valuable aid in following the text. The instrument is actuated by electricity and is capable of producing, in their desired intensity, sounds extending over five octaves, passing through all the vibrations from 80 to 3500; these sounds are conveyed to the ears by ear-pieces, like those of a telephone, and it is the re-education by these sounds which forms the treatment. Both ears are treated separately, three to six minutes at a time, daily or twice daily; if no improvement results after 12 treatments the case is pronounced hopeless; if there is improvement the full course of 30 treatments is proceeded with. Improvement lasts, as a rule, from six to nine months, when another course is required. This is, of course, a drawback, but, if improvement be considerable, no deaf patient will grudge all the time and money he can spare.

The book adds little to the author's paper, published in THE LANCET last year [1]; he then gave his report of 100 cases treated, divided equally between cases of nerve-deafness, chronic otitis media, and otosclerosis; of 34 nerve-deafness patients 28 improved, of 33 otitis media patients 22 improved, and of 33 otosclerotics 18 improved. It is noticeable that nerve-deafness gave the best results, and it is difficult, in the absence of details, to realise of what kind of nerve-deafness the 34 cases consisted; Dr. Cathcart specifically says that he has not included any cases of neurasthenic deafness, or any cases caused by drugs (such as quinine or nicotine), or by syphilis, or due to war injuries, and we presume that he has excluded hysterical cases. Outside these categories nerve-deafness is not very common except among boilermakers and kindred trades. His list includes two girls of 9 and 12 years of age; further details of these cases would have been of interest. Dr. Cathcart further allows no tests to be of any value except the voice and the whisper. He tells a story of an otologist whose whisper varied greatly before and after treatment; we are sure that Dr. Cathcart's voice is under better control than this, but it is not an exact method, and we wish that results could be tested with greater mechanical accuracy; could it not be done satisfactorily with the audiometer, an instrument already described in our columns? (THE LANCET, 1925, i., 945).

We do not wish to be too critical of a comparatively untried method, though it involves a great expenditure of time on the part of aurist and patient; these are not insuperable drawbacks to any treatment, provided it can be proved to give adequate relief in a sufficient proportion of cases.

DAME LOUISA ALDRICH BLAKE.

By Lord RIDDELL. London: Hodder and Stoughton, Ltd. 1926. Pp. 91. 6s.

Lord Riddell in writing this short biography has aimed at revealing the subject's personality, at saying what she was as well as what she did, and at explaining how she was affected by her surroundings. The result is a sympathetic piece of work, and a small volume which Dame Louisa Aldrich Blake's friends and admirers will like to possess. The description of her parentage and early training prepares us with unusual aptness for the manner of woman that she became, and we can see how, almost inevitably, she turned to the profession of medicine as providing the best chances for the realisation of her ideals. An exceptionally successful career in the schools was followed by the tenure of a series of important posts at the Elizabeth Garrett Anderson and Royal Free Hospitals. In 1914 she was elected to the post with which her name is most closely associated, that of Dean of the London (Royal Free Hospital) School of Medicine for Women, and in that capacity she proved herself an admirable administrator, a great person at committees, and, to the considerable surprise of her colleagues, a financial adept who could make her theories of progress keep in line with the messages of bookkeeping and of balance-sheets. How the school prospered under her, how honours came to her, as well as the more intimate aspects of her character are well set out by Lord Riddell in a sketch which, as is explained in a prefatory note, has been deliberately made a short one, but is none the less vivid and complete within its limits.

[1] THE LANCET, 1925, i., 968.

ROENTGEN INTERPRETATION.

Third edition. By GEORGE W. HOLMES, M.D., and HOWARD E. RUGGLES, M.D. London: Henry Kimpton. 1926. Pp. 326. 21s.

THIS excellent little book has now reached its third edition. The less useful illustrations have been replaced and a considerable number of new ones have been added, so that they now form a valuable adjunct to the text. Parts of the text have been revised and a general account of Graham's method of gall-bladder investigation has been included. In the chapter on chest work some account is also given of the use of lipiodol. A chapter on Fluoroscopic Technique and Protection has been added.

This is one of the best introductory text-books on radiology that we know; the authors have given a clear account of the various radiological methods employed and of the pitfalls that await the unwary, whilst surprisingly little has been omitted. The bibliography at the end of each chapter provides for those who require a more detailed account than it has been the author's intention to give.

JOURNALS.

THE PRESCRIBER for November is a special number devoted to rheumatic disease, with particular emphasis on their economic aspect. The prefatory part recognises that the term includes affections of a substantially different character, that tonsillar sepsis plays a prominent part in the ætiology of acute rheumatism, and that the treatment of chronic rheumatic diseases in general is entering on a more hopeful phase. The suggestion is approved that every large city ought to provide institutional treatment where rheumatic children can enjoy sunlight and fresh air with controlled rest over many months. Chronic rheumatism is regarded as having in part a climatic distribution, hence an effort should be made to compensate unfavourable climatic influences.—Dr. M. B. Ray describes the inflammatory connective tissue reaction characteristic of fibrositis, the nodules varying in size from a large pin's head to a pea, and he advocates early massage as a means of breaking up and dispersing these nodules and promoting free circulation of lymph. Fibrositis, he admits, is a veritable pitfall to the careless diagnostician.—Writing on osteo-arthritis, Dr. G. L. Kerr Pringle attaches importance to the observation that sterile synovial fluid removed from the knee-joint of an early case sets up degenerative changes when injected into the joints of an experimental animal, thus demonstrating the presence of toxic substances.—Mr. A. G. Timbrell Fisher, describing the surgical treatment of this disease, shows that treatment based on physiology and pathology holds out hope of preventing disability.—Dr. G. A. Allan estimates that there are 50,000 school-children already subject to organic heart disease, to whom salicylates may prove harmful by shortening the period of rest in bed; rheumatic carditis shows a predilection for children of the poorer classes who live in damp houses, and for them a residential hospital-school is the best after-treatment yet evolved.—Dr. J. L. Llewellyn discusses the relation between goitre and rheumatism, having found that acute rheumatism in the child of a goitrous mother

may be rebellious to salicylates but yield rapidly when thyroid is superadded. Iodine prophylaxis in goitrous regions will, he thinks, diminish also the incidence of acute and cardiac rheumatism.—Dr. A. G. Watson has found ultra-violet ray therapy of much benefit in rheumatic conditions, and Dr. J. B. Burt considers that natural mineral waters may have a specific action on certain forms of rheumatism. The symposium ends with a memorandum on spa treatment for insured patients.

TOBIAS SMOLLETT AND THE HUNTERS.[1]

IT is curious that a writer, as original, and, indeed, famous, as Tobias Smollett, should have been so much of a mystery to his own generation. He wrote little of himself, although in one place he denies that he has been personally through the blackguard scenes which he describes so brilliantly in his novels. He declares himself no friend to the Bohemianism about him. A man of family and, for his day, well equipped in education, he is neither a Pickle nor a Random, but much of a Jerry Melford—we trust that Humphry Clinker is still familiar reading. But he suggests Grub-street in his perpetual monetary difficulties, and his few discovered letters tell us little about his life save that he is for ever trying to raise loans.

The letters, some 74 in number, counting the description of a letter known to exist, have been admirably reproduced and annotated by Prof. Edward Noyes, of Yale University. Many of them are addressed to medical men—Dr. Macaulay, the husband of the lady historian, Dr. John Moore, and notably to the brothers William and John Hunter. The longest of the letters is, indeed, addressed to William Hunter, and one of the best shorter ones, reproduced in facsimile as a frontispiece in the present volume, is to the immortal John. The Hunters were his friends and patrons, and Jesse Foot, in the malicious way which he employed always in dealing with the Hunters, has suggested that Smollett wrote much of their work, not only in the *Critical Review* during the controversy with the three Monros, but at later dates. "I only attribute the keen conduct of the disputes on the part of the Hunters," says the pleasant Jesse in his "Life of John Hunter," "as they are to be found in the *Critical Review*, to the disinterested assistance of Smollett. I do not mean to be understood in saying that Smollett extended his services further," adding immediately "this episodical digression does not impair in the least the force of my general assertion, that John Hunter never was the author of any production which appeared under his name." The physician-novelist figures in a very clever sketch by Barber Beaumont, which is one of the satiric illustrations to Foot's own copy of the "Life" now in the Wellcome Historical Museum. He is shown writing to the dictation of John Hunter, who stands anxiously at the foot of a table while William sits by also apparently much interested. The likenesses are excellent and the cartoon is called "The Conspiracy."

Five very interesting letters to William Hunter, reproduced by Prof. Noyes, the originals being in the library of the Royal College of Surgeons of England, contain accounts of his travels in the south of France in search of health. He discovered Nice, the climate of which suited his constant cough, and has embodied the contents of this, the longest letter in the collection, in his "Travels," where it appears in a revised form. "On that part of the Rampart," he writes, "which faces the Mediterranean you enjoy summer all the year." He consulted Dr. Antoine Fizes, "the Boerhaave of Montpellier," who prescribed for him a kind of soup ("Bouillons of Land Tortoise"), opiates at night, and a course of goat's milk. He suffered from an obstinate ulcer, was very rheumatic, but was supposed by Fizes to be phthisical; but Smollett calls Fizes, though he enjoyed a high reputation as observer and therapeutist, "an old sordid scoundrel, and an old woman into the bargain." William Hunter was a generous benefactor to Smollett, and upon a letter of the latter containing a promise to repay a loan of £50, William writes: "In case of my death I desire my executors will not make any demand upon Dr. Smollett, because I sent the money to him as a present, never meaning to take it again." "It is pleasant," comments Prof. Noyes, "to record this passage of friendship, and to show that Scots may be generous as well as thrifty!" In August, 1763, Smollett writes to John Hunter from Boulogne, signing himself "with the most perfect Friendship and Esteem, Dear Doctor." The MS. of this interesting letter is, like many others, in America, and is the property of Prof. Tinker, who is an authority upon Smollett. The novelist refers to John Hunter's friendship with the Earl of Hertford and desires him to present "my most respectful compliments to him, and let him know that the books are restored." Lord Hertford was English Ambassador in Paris, and had been instrumental in getting Smollett's books, impounded at Boulogne, restored to him.

In another long letter Smollett says that this is the twentieth day that he has bathed in the sea, and later on refers to John Hunter as a book collector "glad to have every curious book on the face of the Earth. But I should be afraid of sending you some Books," he adds, "which you may have already." John Hunter's books were probably embodied in the sale of his effects in 1796, which his widow was driven to sanction in order to support herself; in the two sale catalogues of that year setting out Mrs. Hunter's curiosities and books, we find dictionaries of various languages, classics such as "Don Quixote" in an old edition, and learned works of all kinds, obviously of Hunter's collecting. It was John Hunter who suggested that the Library of the Corporation of Surgeons should be started, and he proposed sending books to it which have never been traced in the Library of the Royal College of Surgeons. There are some 500 items in one of the Ann Hunter catalogues of books now in the British Museum, and it seems quite incorrect to suppose, as has been done, that the volumes were negligible or nearly so.

In a grimly humorous short letter to John Hunter, dated from Leghorn in January, 1771, Smollett wills his body to the great surgeon. Subject to Mrs. Smollett's consent, he says, "you shall receive my poor carcase in a box, after I am dead, to be placed among your rarities. I am now so dry and emaciated, that I may pass for an Egyptian mummy, without any other preparation than some pitch and painted linen, unless you think I may deserve the denomination of a curiosity in my own character." The letter is cited by the late Thomas Seccombe in the "Dictionary of National Biography." Mr. Seccombe's remains the best-known life of the medical novelist. The letter is, perhaps, one of the first of those sent to the conservators of the Hunterian Museum from persons anxious, in the interests of science, to leave their bodies to the Museum. There are several of these missives among the papers left by Sir Richard Owen, but as the senders probably died where their wishes could not be attended to the bodies were to all appearances not delivered in Lincoln's Inn-fields. Prof. Jeffrey Bell, the comparative anatomist, actually left his body to the College in 1924, and the skull of this once familiar character now forms part of Hunter's collections. Smollett is buried at Leghorn, near which he died in September, 1771. Prof. Noyes is of opinion that his health had greatly improved at the last, for in a letter written a month before his death he talks lightly of undertaking an arduous journey and of wanting the "best part of a Barrel" of wine for a dinner party. This, however, may have been an instance of the false eupepsia of the phthisic.

V. G. P.

[1] The Letters of Tobias Smollett, M.D. Collected and edited by Edward S. Noyes, Ph.D., Assistant Professor of English in Yale University. Cambridge: Harvard University Press. 1926. $3.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 20, 1926.

THE MINERAL ELEMENTS IN NUTRITION.

In a recent Chadwick lecture Sir ROBERT GREIG reviewed the present state of scientific investigation into problems of animal nutrition. As chairman of the Board of Agriculture for Scotland, he is in close touch with the work which is being done at research centres there, and he evidently has also a wide knowledge of similar work in other countries. His lecture may come to many as a revelation both as regards the prevalence of deficiency diseases, in the sense of mineral deficiency as Sir ROBERT GREIG chiefly uses the term, and as regards the amount of information already accumulated of the causes of these diseases in animals and the means of preventing them. It appears that not only artificial diets used in modern intensive farm practice, but also natural pastures are often of a composition altogether unsuited to support the demands of growing animals, or the drain of lactation, on account of insufficiency of calcium, phosphorus, or some other inorganic element. Experiments at the Rowett Research Institute, summarised by Dr. J. B. ORR in a presidential address to a section of the British Association in 1925, show that the addition of lime to the food of pigs on a diet deficient in this element may double the gain in weight in a given time, and similar experiments by Sir ARNOLD THEILER in South Africa make it clear that the feeding of small amounts of bone meal to cattle grazing in an area where phosphorus is deficient in the pastures will treble the gain in weight. Elements other than calcium and phosphorus may also be deficient. Thus, young pigs seem liable to suffer from deficiency of iron, and deficiency of iodine appears to be accountable for several different pathological conditions in addition to goitre. In short, as regards farm animals, artificial dietaries are likely to be deficient in one or more inorganic elements, particularly calcium, and there are large areas of the Empire where the natural pastures are so deficient in certain inorganic elements that they cannot support in health the animals grazing on them. These data support THEILER in his view that, at least in respect of farm animals, mineral deficiencies are of much greater practical importance than vitamin deficiencies.

How does the matter stand with regard to human dietetics? It is a striking fact that we have no very definite idea of the amounts of calcium, phosphorus, iron, or iodine that are required by a growing child or a nursing mother, or of the amounts that are supplied by different human dietaries. Sir ROBERT GREIG points to the increased consumption of cheap carbohydrate foods and highly-refined foodstuffs. Dietaries including large proportions of these foods and little milk or vegetables should presumably be placed in the same category as artificial farm rations, for they are deficient in calcium and possibly other minerals. It seems probable that malnutrition in children may arise from this cause. In the poorer classes, whose children are most likely to be fed chiefly on such foods, both stunted growth and rickets are common. Without dogmatising on the relative parts played in the causation of rickets by hygienic conditions, lack of vitamins, lack of sunshine and lack of lime, it is fair to point out that a condition resembling rickets can be produced or avoided in farm animals by altering the proportion of minerals in the food, and that the Rowett Research Institute has shown the effect of sunshine in healing rickets to be bound up with its effect in increasing the absorption and utilisation of the calcium in the food. As Sir ROBERT GREIG says, milk is a perfect food. But many children are fed, not on human milk, but on cow's milk; and cow's milk, compared with human milk, contains more calcium, but less iron. Further, it is often supplemented from an early age with highly-refined cereal products containing little or no iron. Is it not possible that one of the causes of anæmic conditions in infants may be an actual shortage of iron in the food? The question of whether goitre is due to deficiency of iodine is by no means settled, but the results, as far as they go, on domestic animals and human beings, are in general agreement and seem to point to a possible iodine deficiency in certain areas. It is pretty certain that the danger of mineral deficiency in the diet is less in the case of human beings than in the case of farm animals, but there is undoubtedly much malnutrition suggestive of qualitative errors of diet. The resemblance between these conditions and the conditions arising in animals on diets deficient in mineral elements is sufficiently close to suggest that deficiency of minerals may be one of the factors involved. Such deficiencies would be more likely to assume importance under conditions of restricted diet. In war-time the food of an isolated besieged population is more restricted, and therefore more likely to be ill-balanced than normally, and war-time is always associated with ill-health and disease, in particular with malnutrition in children and nursing mothers. RUBNER calculated the inorganic content of the rationed food of the Germans in 1917–18. The daily intake of calcium, phosphorus, and iron was estimated in grammes at 0·226, 1·922 and 0·089 respectively, compared with 1·221, 4·472, and 0·154, the estimated pre-war intake. GREENWALD has suggested plausibly that this change in the inorganic content of the food may have had some influence on the causation of "war œdema." It is possible that in the study of human dietetics too little attention has been paid to the inorganic elements in the food, and that an investigation into this subject would give interesting results.

INCOME-TAX AND EXPENDITURE ON PROFESSIONAL TEXT-BOOKS.

EXPENDITURE upon his professional library is by no means a negligible item in the balance-sheet of the average member of a learned profession. Doctors can share the disappointment of lawyers at a solicitor's recent failure to persuade the income-tax authorities to permit deductions for the wear and tear of his law-books and for the cost of replacing obsolete volumes. There was solid ground for the solicitor's contention. Schedule D of the Income-Tax Act lets the trader make his reasonable deductions in respect of the diminished value of his machinery or plant by reason of wear and tear; it also allows him, in estimating his trading profits or gains, to deduct the expense of replacing obsolete plant or machinery. Last year's Finance Act declared that these concessions enjoyed by the trader should also be enjoyed by the professional man. The solicitor very reasonably argued that his law library was part of his machinery or plant for the purposes of his profession; further, some of it—presumably his text-books on

the law of property—had become obsolete during the past year owing to great changes in the law. The sum at stake was only £8, but the General Commissioners refused to allow the deduction, and they have now been upheld by the High Court. Mr. Justice ROWLATT said not one person in a hundred would claim that the books of reference on his shelves could be called plant or machinery. He agreed that the books used by professional men cost a lot of money, but he found himself obliged to dismiss the solicitor's appeal with costs.

What does "plant or machinery" mean in the case of a surgeon or physician? The motor-car for visiting patients, the surgical instruments and the surgery fittings, even the replacement of broken bottles—these are items for which the practitioner should claim to make annual deductions on the score of wear and tear, due regard being had to necessity rather than luxury, and to professional rather than private and personal use. No great number of legal decisions enlightens the interpretation of "plant or machinery" in this connexion, nor is the acute and experienced mind of Mr. Justice ROWLATT dependent upon decided cases in revenue matters. One of his own previous decisions, given in 1915, refused to allow Lord DERBY to deduct annual depreciation on the active lives of two stallions at stud in a racing stable. The life of a horse, said the learned judge, has a normal average length, like that of a tree, in the course of nature; ownership of it is an investment in a naturally wasting security; loss of usefulness due to old age is not wear and tear. In the face of this decision it seems hard if a costermonger cannot deduct for wear and tear to his donkey, or a carrier in respect of his horse, since a ferryman could presumably make deductions in respect of his boat. In extending the concession for wear and tear to professional men, Parliament must have realised that their "plant" would intrinsically differ from that of a butcher, baker, or candlestick-maker. Learned professions need the equipment of learning. The wear and tear of a book is as obvious as that of a boiler-house. Traders are presumably allowed deductions for machinery rendered obsolete by new inventions or by the accessibility of fresh sources of power. Why should not a professional man's professional library be "plant or machinery" for which income-tax deductions can be made when existing treatises are rendered obsolete by the passing of fresh laws or the publication of fresh scientific discoveries? Not long ago it was held that a medical practitioner holding various official appointments was not allowed[1] to deduct for income-tax purposes the cost of annual subscriptions to professional societies, though the expenditure was reasonably necessary for the efficient discharge of his duties.

So stands the law, and now no deductions will be possible in respect of the professional man's library unless the Income-Tax Act is amended.

POLIOMYELITIS IN SCHOOLS.

ACUTE poliomyelitis may occasionally be transmitted by flies or dust, but it is generally agreed that the infection is spread mainly through carriers, and the time is appropriate to summarise the excellent short chapter on this subject in Dr. K. C. PAUL'S little book on "The Carrier Problem."[2] Every case, this section of the book suggests, of poliomyelitis is regarded as developing from one or other type of carrier—contact or convalescent. Contact carriers are responsible for epidemic spread or for conveyance of infection to distant places; in them the carrier state usually does not last longer than three weeks; some of them are incubating and later develop symptoms. Convalescent carriers are generally persons who have had an unrecognised abortive attack, and in them the carrier state may be chronic. A group of 110 cases of acute poliomyelitis in an American community were all infected by a carrier from an infected household in a distant locality. S. FLEXNER was however unable to demonstrate by animal inoculation the long survival of the virus and believes that enduring carriers are of exceptional occurrence. Certain American observers found the virus still viable in the dust of the sick-room in which patients suffering from the disease had been confined; most regard the virus as living in the nasopharynx and occasionally in the tonsil. Numerically the susceptibility of the members of a community is small; C. HERMANN estimates it at less than 2 per cent., and attributes the defence against infection to local protective action, natural or acquired, on the part of the mucosa and its secretions. Certainly, a substance capable of neutralising the virus has been found in the washings from healthy nasopharyngeal mucosa, and carriers may owe their contamination to the absence of this neutralising substance. The method of transference—whether by direct contact, droplets of infected mucus, or virus-laden dust—is still problematical, for the virus eludes microscopic identification and its recognition requires inoculation into monkeys. In America management of the carrier has been limited to quarantine; the Flexner school regards the application of antiseptics to the nasal mucosa as of doubtful value, and it is not impossible that they may affect unfavourably the destructive properties of the nasal mucosa and to that extent be even objectionable.

One attack of acute poliomyelitis protects against a second, and, as we have recently pointed out,[3] there is reason to suppose that the general immunity of adults and older children in this country has been acquired by exposure to mild infection. In a community where this infection is easily picked up it is probable that most of the children will have met and fought the virus before they are more than 4 or 5 years old, and the disease is therefore unlikely to be dangerous in schools except when it has been uncommon amongst the general population for a long period. These assumptions may explain why school epidemics have been so rare in this country, and their rarity in turn explains why during the last few weeks different authorities have taken opposite views of the problems they present. About the middle of October a number of cases of acute poliomyelitis were reported in Broadstairs and the neighbourhood, many of them in boarding-schools and day-schools. The urgent question arose: Should the children be sent home? On the advice of Lord DAWSON and Dr. JAMES COLLIER it was decided that they should not. Dr. E. G. MOON, of Broadstairs, appealed to a group of schools affected to fall in with a policy of strict isolation, and each of them did its best to cut itself off from the town. The pupils were daily inspected and those who showed the slightest illness were at once removed; general meetings—as for chapel—were made as short as possible; the children were kept a good deal in the open air and they were made to gargle their throats three times a day with weak antiseptic. Informing circulars which we reproduce on page 1085, were sent to the parents, nearly all of whom allowed their children to remain at school, although, of course, they were not asked to agree to this course against their own judgment. The result, in this instance, goes far to justify the bold action taken; during more than a fortnight no fresh case of poliomyelitis has arisen. But it does not in itself show that the totally different action taken last week by the authorities at Uppingham School was an error of judgment. At each place a heavy responsibility was incurred in order to gain certain advantages. At Broadstairs it was claimed that the benefit of supervision and a healthy life outweighed the risk which any particular child ran by remaining at school; but it must be admitted that this was none too certain, and some of the cases which developed after the order to stay was given must be placed on the debit side in casting the accounts of the policy. On the credit side the present generation of Broadstairs

[1] THE LANCET, 1925, i., 60.
[2] Oxford Medical Publications. 1926. Pp. 102. 5s.
[3] THE LANCET, Nov. 6th, p. 964.

scholars is now reasonably immune from poliomyelitis, and the schools have solved their own problems without endangering the rest of the community. Dr. PAUL, whose views we summarise above, is reasonable in his assertion that any person who has been in contact with an active case of poliomyelitis must be regarded as a carrier, and the only management of a carrier at present is to place him in quarantine for at least three weeks. The responsibility which Uppingham School has taken is to send 500 potential carriers to their homes—where it is to be hoped that they will have been placed under adequate control as a letter to the parents from the headmaster would suggest. In an interesting paper which we publish this week (see p. 1057) Dr. A. I. SIMEY, of Rugby, defends the practice of sending boys home at the end of term, even although they may be in quarantine. "If a boy *has* to be ill," he says, "home is the more appropriate place for him." This view will have its critics. No one would suggest that more than a very few of the Uppingham boys are really carriers, although the two cases occurred in separate houses; but at the same time, from the point of view of public health, the situation cannot now be controlled as it could have been controlled even in the scattered units of the school. At least one of the pupils taken away from Broadstairs has already infected another child in another part of England, and it may happen that carriers from Uppingham—if any—will do the same; which possibility has to be set against the natural satisfaction which the boys' parents must feel at having their sons removed from an immediate danger. Many medical men would undoubtedly take their children away from school in similar circumstances; but undoubtedly the child thus removed should, properly speaking, be isolated as a possible carrier. The frank account of the two cases at Uppingham, furnished by Dr. WILLIAM DUNN, the school medical officer, shows the fulminating nature of the first case and the successful treatment of the second, while pointing out that at Uppingham the isolation policy would have been attended with scant chances of efficacy.

Some of the disadvantages of protecting young school-boys against infectious diseases are spoken of in Dr. SIMEY'S address. They are apt to contract their measles and mumps at a more inconvenient time. We have referred above to the view that immunity in poliomyelitis is chiefly acquired, and, if this is true it furnishes, perhaps, an argument that carriers should roam as they will. It does not, however, furnish a convincing case in favour of allowing the disease to work out its own salvation in a confined community—e.g., a school—because it is possible that an infection becomes more virulent in its passage through such communities. When Uppingham reassembles, as has been pointed out, the risk of infection will still remain, and an efficient means of protection would obviously be useful. In this connexion some apposite results have recently been communicated to the Swedish Medical Society by Dr. H. DAVIDE, whose earlier work on the bacteriology of this disease was already well known. During 1924 there was a series of outbreaks in a Swedish district, where the scattered and comparatively stationary character of the population offered exceptionally good facilities for studying the epidemiology of the disease. Dr. DAVIDE spent a considerable time in making personal, house-to-house investigations, and was able in many cases not only to trace in chronological order the spread of the disease from one person or family unit to another, but also to show that the proportion of slight or abortive forms was very considerable. Having mapped out the areas that were likely soon to be involved in the epidemic, Dr. DAVIDE proceeded to immunise a certain proportion of the juvenile population with the serum of patients convalescent from a typical attack of acute anterior poliomyelitis. The principle followed was that put into practice in the case of measles by NICOLLE and CONSEIL. The serum was taken from the convalescents not less than ten days after they had become afebrile, and the usual steps were taken to ascertain that the serum was sterile and Wassermann negative. Five c.cm. of the serum, to which 0·5 per cent. of carbolic acid had been added, were injected into the muscles in the gluteal region. Only persons under the age of 25 were selected for this experiment, and half the number of the persons under this age were not treated, so that they might serve as controls. Dr. DAVIDE must have experienced difficulty in finding controls, and he admitted that while it was easy to interest parents in the inoculation of their children, it was much harder to explain why only every other child was to be treated—such are the conflicts between science, as defined by the seeker after knowledge, and humanity, as defined by the parent. Dr. DAVIDE succeeded, nevertheless, in studying 157 persons under the age of 25 in a threatened district. Of these he inoculated 73 and left 84 to serve as controls. Of these 84 as many as 14 subsequently developed abortive or typical acute anterior poliomyelitis, whereas among the 73 who were inoculated only one fell ill. This was a boy, 4 years old, who developed definite cervical rigidity within 40 hours of the injection. The child was probably febrile, but the temperature was not taken. The malaise lasted only half a day, and it seems likely that the child was caught in the incubation period and that the inoculation made the disease run a mild course. Among the 14 controls who developed the disease, the majority showed only the abortive forms, but there were several cases in which definite paralyses developed. As Dr. DAVIDE pointed out, his material is too small to justify final conclusions; but it certainly warrants further investigations on the same lines. The immunity conferred in the manner indicated may not last more than a few months, but in the meantime an epidemic may have blown over, and the dangerous time of the year, August and September, during which most paralyses and deaths occur, may have been safely tided over. The supply of suitable serum is, of course, bound to be limited, but the chances of its doing any harm are very small. For, as Dr. DAVIDE insisted, serum taken from a convalescent at least 10 days after he has become afebrile, is not at all likely to contain the virus of acute anterior poliomyelitis, which has not hitherto been conveyed from one experimental animal to an another by blood infection.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Thursday, Nov. 25th, at 5 P.M., Mr. Harold Chapple will lecture at the Medical Society, 11, Chandos-street, Cavendish-square, London, W. 1, on the Emergencies of Pregnancy and Parturition. On Tuesday, Nov. 23rd, at 11 A.M., Mr. B. Leggett will give a lecture-demonstration, at St. Mark's Hospital, on Radiological Investigation of the Colon and Rectum. Both these lectures will be free to members of the medical profession. A week's comprehensive course will be given at St. Mark's Hospital, from Nov. 22nd, instruction being by operation, demonstration, and lecture. A late afternoon course (5 P.M.), from Nov. 22nd to Dec. 18th, will be held at the West End Hospital for Nervous Diseases, 73, Welbeck-street, London, including lectures and demonstrations upon selected cases; the fee is one guinea. For the convenience of general practitioners the London Temperance Hospital will hold a course in medicine, surgery, and the specialties from Nov. 29th to Dec. 11th (4.30 to 6 P.M.). Courses in obstetrics can now be arranged for at the Queen Charlotte's Hospital and the City of London Maternity Hospital. The Fellowship has concluded arrangements with the Samaritan Hospital for Women to provide clinical assistants; personal application should be made to the Fellowship. Practical courses in anæsthetics can also be provided. Copies of all syllabuses, of the General Course Programme, and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship at 1, Wimpole-street, London, W. 1.

Annotations.

"Ne quid nimis."

THE ADJUSTMENT OF ARTIFICIAL LIMBS.

THE circumstances attending the fitting of a patient with an artificial limb have been discussed on more than one occasion, accompanied with the suggestion that regular coöperation between the surgeon and the instrument-maker to obtain the best results from their joint work is not sufficiently insisted upon. A case in point has been brought before us this week. The patient had the leg amputated below the knee for a chronic tuberculous condition, when the instrument-maker found that, owing to the conformation of the stump, great difficulty was experienced in fitting an artificial limb, and in the end the particular prosthetic appliance was heavy, while as it happened the firm in question, Desoutter Bros., have introduced artificial limbs of unusual lightness. The heaviness of the appliance was not obviated by many modifications and adjustments made by the instrument-maker, whose adaptations so far as measurements was concerned often appeared trivial, but were of importance if a successful result was to be obtained. The opinion of the instrument-maker on the whole situation is not new, but it is none the less important. It is that it should be a routine for the "surgeon about to perform an amputation to take counsel with the artificial limb-maker in order that the precise site of the operation, flaps, and other details might be so devised as to make an artificial limb of the greatest possible service and comfort to the patient." These words he qualifies by the admission that he is not talking about urgent cases, but his strong opinion is that in the individual case, which led him to communicate with us, a slight change in the shape of the stump would have allowed the patient to be fitted with a lighter appliance, and would have spared a great deal of the time and trouble expended on modifications of the artificial limb in the course of the fittings. As it is certain that artificial limb-making can never be a matter of mass production, every appliance depending for its perfect fit upon individual and variable factors, there is much to be said for the instrument-maker's point of view—so much indeed that some surgeons always call the instrument-maker to their assistance prior to operation. "Amputation both in civil and military practice, equally on account of disease or injury, have to be performed to save the patient's life or, at least, to cut short an exhausting disease or to rid the body of a useless segment. These are the primary objects of amputations. The secondary object of an amputation is to provide a stump most useful and suitable for the attachment and use of a prosthetic appliance." This quotation from Mr. Muirhead Little's recent book, "Artificial Limbs and Amputation Stumps," indicates the necessity for coöperation between the surgeon and the artificial limb-maker. It is necessary for an artificial limb to be accurately fitted to the amputation stump. It is also advisable that the amputation stump shall be fitted for the reception of the artificial limb. It is still too often found when an amputation has been completed and the stump has soundly healed that it is not the best that could have been devised from the point of view of the prosthetic appliance. All surgeons must be prepared to carry out amputations, but all surgeons do not study the mechanism and fitting of artificial limbs, and all are therefore not familiar with the problems of the limb-maker. As a result of war surgery and of the segregation in hospitals such as Roehampton House of large numbers of patients who had suffered amputation, a great deal has been learnt about the best methods of performing amputations in order to render the stumps useful and to adapt them to the fitting of modern types of artificial limbs.

Observations derived from this experience are incorporated in such works as that of Mr. Muirhead Little and in Sir Robert Jones's "Orthopædic Surgery of Injuries," and it seems probable that this teaching has not received sufficient attention from the surgical profession, for complaints still frequently arise that the limb-maker, being unable to fit a stump in a satisfactory way, has expressed the wish that the amputation had been performed differently. It is not difficult to quote instances. Amputations through the tarsus (Charcot's amputation) are in many cases very difficult or indeed impossible to fit, and modern surgery condemns this method of amputation as being far less useful than a Syme's amputation. Amputations below the middle of the leg are equally awkward; the long stump gives no additional advantage in leverage, but it occupies a large section of the bucket of the artificial limb and necessitates the whole of the leg-piece being made thicker than is necessary, so that the limb is not symmetrical with its fellow. In addition, it is found that this long leg amputation leaves a stump in which the circulation in the terminal part is almost invariably bad. Amputations through the knee-joint and immediately above it are extremely awkward to fit, necessitating a heavy and cumbersome limb without giving any compensating advantages, unless in very exceptional cases, and in amputations through the hip-joint, if a bucket is to be comfortably fitted, the flaps must be kept sufficiently short to leave a firm and rounded stump, the flabby, loose stump resulting from the Furneaux-Jordan amputation being extremely difficult to fit.

It is most unsatisfactory for the patient if, after an amputation has been performed and the stump is soundly healed, he has to be told that some further operative treatment will be required before the limb can be satisfactorily fitted. It would appear to be reasonable that in all cases where the surgeon is not used to the fitting of artificial limbs and where he has to perform an amputation which is not a matter of urgency he should consult with the limb-maker in advance and possibly modify his methods somewhat in order that the stump resulting may be one to which an artificial limb can be comfortably fitted. Of course, the primary factors to be considered in fixing the level of amputation are the disease or injury for which the operation is being performed and the necessity for removing this adequately, but the level so fixed may be modified as the result of a consultation with the limb-maker and the method of cutting flaps, &c., may also be adapted with this end in view.

SOCIAL CAPACITY.

GOOD behaviour under close supervision in an institution may be nothing more than passive compliance with routine and affords no guarantee of social adaptability to the conditions of ordinary life. This is emphasised by Dr. R. F. Jarrett in an article which appears on p. 1059, and it is a point too frequently overlooked or at least imperfectly realised in connexion not only with the insane and the defective but also with the criminal, when the question of release is under consideration. Outside environment requires to be carefully selected in conformity with the mental qualities of the released prisoner, for, as Dr. Jarrett points out, while criminality in any individual case may be explained by the play of circumstances upon the personality, that personality, that inherent mental constitution upon which they play, is as important as, or perhaps more important than, the circumstances. It therefore becomes a matter of much significance to discover by some means what the individual's possible capacity for social adaptation is, and to this end many experimenters have suggested tests of various types. Among others Dr. S. D. Porteus, of the Vineland Training School, New Jersey, claims for his now well-known "maze" tests special value in this direction. Dr. Jarrett has applied these tests to 100 Borstal lads at the end of two years' training. The results he quotes would have been more valuable if he could have demonstrated the correlation of these results

with the actual social behaviour of the lads in after-life (for which he would, of course, have to wait a few years) or even with their social traits as revealed during their institution life. Dr. Porteus himself devised a social rating scale, in which certain mental qualities—planning capacity, executive ability, suggestibility, impulsiveness, excitability, irresolution, moodiness—were assessed by expert observers, and found a fairly high correlation to exist in persons of 20 to 30 years of age between these estimates and the maze tests results, much higher than that given by the Stanford tests. Observations of this or of an analogous type carried out on a fairly large scale are indispensable before reliance can be placed upon the maze tests as a social indicator. Some English observers are disposed to think that the qualities of foresight and planning capacity revealed by these tests are very superficial, and give but a poor index of the foresight required in daily life. Others have found some relation between the results and practical manual capacity in children. The qualities of intelligence lend themselves fairly readily to testing methods, but the temperamental qualities are elusive and not only may make a man's "actions" inconsistent with his "words," but also make his action at any one moment, which may be a moment of crisis, utterly inconsistent with all his previously known character. Adequate tests of a man's moral reactions are not yet forthcoming, and it does not appear to be the case that the Porteus maze tests are of great help in this direction, except in so far as they reveal impulsiveness and excitability of temperament.

THE SELECTION OF MEDICAL STUDENTS.

THE Argentine medical schools, and especially the one at Buenos Aires, are suffering from a plethora of students. Writing in the *Semana Medica* (Sept. 16th) Prof. B. A. Houssay voices the opinion of the majority of the teachers, when he says that the number of candidates for medical degrees ought to be limited by a previous inquiry into their physical, intellectual, and moral qualifications for the study of medicine. The Argentine, with a population of 11,000,000, in 1925 had 5800 students, whereas the United States, with a population ten times greater, had only 18,200. The number, moreover, is steadily increasing. In 1910 there were 2150, but in 1926 6960 students. Of the 700 or so who enter yearly at Buenos Aires, not much more than a quarter qualify, the remainder dropping out at various stages of their career. Hence the troubles of overcrowding are felt especially by teachers of the preliminary sciences, whose laboratory and class-room accommodation are quite inadequate and who are overworked in the attempt to give instruction, much of which is thrown away. Such a state of affairs cannot be in the best interests of the community or the medical profession, for an excess of students implies inferior training for those who will ultimately qualify. As for those who give up the struggle, they have spent a year or two in idleness or in work which may be of little value to them afterwards and have deferred their settlement in life—though the educational value of elementary medical training is, of course, considerable. And apart from these considerations a good deal of public money is often used up in the instruction of those who fail to qualify. Granted that limitation is needed, the method presents difficulties. Probably Prof. Houssay's suggestion that before entry there should be courses of study under the supervision of the Faculty of Medicine is as good as any. Properly devised and carried out, they should ensure that mere ability to get through examinations is not the only test of suitability for medicine, and that the student who is apt in scientific work is not excluded owing to failure in the ordinary curriculum. The method of *oposicion* (or disputation) recommended by Prof. Houssay in default of preliminary courses is probably unsuited to Anglo-Saxon, though in favour in Latin countries. To keep out mere wastrels some certificate of character may well be required from the school authorities, as it is hardly possible for a board of selection to arrive at an estimate of moral qualifications in a few minutes' interview. It should be noticed that all the best medical schools in the United States limit their numbers, presumably in proportion to the capacity of their class-rooms and laboratories, and this is only reasonable. Similarly, our English medical schools exercise a certain amount of judgment. Any early selection puts a heavy responsibility on the authorities, and there will always be cases of individual hardship, whatever method is adopted. The student whose mental development is somewhat retarded, or who has little aptitude for competitive work, may have the makings of an excellent doctor and will possibly suffer under a selective system; but he already suffers under examinations, and it cannot be to anyone's advantage to have an overstocked profession whose education has been marred by the inadequacy of the means of teaching. An excess of doctors is apt to lead to such stress of circumstances that dubious methods of making a competence are adopted, and whatever the advantages of a free system the fact must be faced that owing to the spread of higher education the number of aspirants to the medical profession is likely to increase rather than diminish.

THE NEW R.S.M. PROCEEDINGS.

THE new Editorial Committee of the Royal Society of Medicine has not been long in getting under way. This Committee consists of the President, Hon. Treasurers, and Hon. Secretaries of the Society, along with a representative of each of the 24 Sections. The Hon. Editors of the *Proceedings* are Sir William Hale-White and Dr. T. Watts Eden, and the first fascicle of the 20th volume, dated November, 1926, which reached us on Nov. 12th, contains reports of Sections which met so recently as the 8th, 14th, 15th, 20th, 21st, and 22nd of the previous month. The format of the *Proceedings* has always been agreeable and the illustrations excellent, but the new series has taken on a more orderly appearance in having a continuous pagination at the extreme head of the page for the sake of indexing and reference, and a secondary pagination for the members of the particular Section who may wish to bind separately the part of the Society's work in which they are specially interested. Author and title of paper also appear at the head of each page. All these changes, so desirable in themselves, and likely greatly to increase the usefulness of the Society to Fellows and Members unable to attend meetings with regularity, take the sting out of an article by Mr. Charles Frankenberger, Librarian of the Medical Society of the County of Kings, Brooklyn, a reprint of which has just reached us[1]. Mr. Frankenberger writes frankly of the troubles of medical librarians, finding most to criticise in the medical periodicals which, he says, comprise two-thirds of the collections of the larger libraries. His greatest grievance is in the matter of page numbering. The ideal is, from a book-making as well as from a library standpoint, one set of page-numbering of all text-matter comprising a volume, and, in the breaking of this rule, he finds the Royal Society of Medicine to have been the greatest offender with its "twenty-five separate sets of paging," now happily at an end. The title of a medical periodical should, says Mr. Frankenbeger, be short, and here, as on the previous heading, THE LANCET may take some unction to its soul, in contrast to Mr. Frankenberger's examples of titles such as *Archives des maladies de l'appareil digestif et des maladies de la nutrition*, and *Berichte über die gesamte Gynäkologie und Geburtshülfe sowie deren Grenzgebiete*. Other points on which this medical librarian sets value are that volumes should begin and end with a calendar year and that Roman numerals should be discontinued in bibliographies, indexes and reference work. He is annoyed at journals which cease publication without giving

[1] Reprinted from the Journal of the American Medical Association, August 21st, 1926.

notice of the fact and with others which change their title, or subdivide it into parts under other titles. And finally he pleads for standardisation in size, for his library shelves have to adapt themselves to the *Denver Medical Bulletin*, with its pages a trifle larger than a postal card, and to the *Voz Medica* of Madrid, which appears in newspaper form, 18 by 24 inches. We are glad that London medical publications are giving him but little cause for trouble.

ULTRA-VIOLET THERAPY IN A GENERAL HOSPITAL.

THE value and limitations of ultra-violet therapy can be assessed more truly from the statistics of big hospitals than from the results of personal experience. An article by Dr. A. C. Roxburgh in the November issue of *St. Bartholomew's Hospital Journal* deals briefly with the results of treatment during the past 21 months of 272 patients, exemplifying 56 different maladies. A complete list of the cases and details of their progress is given and the conclusions drawn are convincingly temperate. It is interesting to note that, in the treatment of lupus vulgaris, purely general treatment, while giving good results, is not considered to eliminate the necessity of local applications. Tuberculous peritonitis did not respond, more than half the patients being worse, or at any rate no better, after radiation. Many conditions responded in a variable manner, for the patient is the most variable factor in the treatment. It would be interesting to compare the results at St. Bartholomew's with those of other great hospitals, and we may hope that such statistics will be forthcoming.

LAUGHTER AND TEARS.[1]

Lord Knutsford's autobiography is a happy and successful man's informal record of what he has done and the environments therewith; it is the life of a social aristocrat, blended with that of an enthusiastic philanthropist and a capable business man. The book is full of good stories concerning kings and cabinet ministers, scholars and sportsmen, nurses and game-keepers, lowly people and social outlaws. There are passages, never elaborated and never gushing, recording the writer's intimate experiences among the suffering poor; they are moving to tears, but their appeal is accentuated by an instinctive determination to avoid what the Americans have taught us to call "sob stuff": the poignancy of these revelations is due to the simplicity of the telling. As we read we can see clearly that throughout his life Lord Knutsford has played many parts successfully exactly because in a sense he never *played* them, but *was* them; he was always himself, and realising the great chances which birth, brains, and temperament had given him for being thoroughly happy himself, he determined to use these chances in contributing to the happiness of others.

All interested in the management of large charities, and especially in hospital work, should read the book with its intimate account of the London Hospital. Mr. E. W. Morris's history of that institution may be well known to many of our readers, but Lord Knutsford's reminiscences make an admirable pendant to the work of the secretary of the institution. When, 30 years ago, Lord Knutsford was asked to take the chairmanship, the buildings, he says, were old and in bad repair, there was but one operating theatre for the 650 beds, one tiny room sufficed for all the bacteriological work of the hospital, there were no pathologists and no clinical laboratories, biochemistry was not thought of, and the accommodation for the nurses was disgraceful.

Many of these words could have been written about a majority of the other general hospitals, but the distinguished staff of the London Hospital at that date do seem to have been performing work which made the hospital famous in circumstances of unusual difficulty. Modestly, and dwelling rather upon instances of successful mendicity than of drastic material changes, Lord Knutsford describes the reorganisation, rebuilding, and refinancing of the hospital, giving in every direction full credit to devoted house committees, and to generous friends inside and outside the institution. It is a record of charitable work for which alone the volume was worth writing.

A fascinating book.

[1] In Black and White. By Sydney Holland, Viscount Knutsford. London: Edward Arnold and Co. 1926. Pp. 392. 21s.

THE VIENNA ANTITOXIN CONTROVERSY.

THE unfortunate accident which occurred[1] at Baden, Vienna, in October, 1924, when six children died after the injection of a mixture intended to produce active immunisation against diphtheria, is still the subject of controversy. The two sides to the dispute are taken by Grassberger[2], who was legally appointed as expert to investigate the matter and to examine the available stock of the incriminated batch of prophylactic, and by Busson[3 4], who with Loewenstein was apparently responsible for the making of the material. Grassberger, who made an exhaustive examination of all material available, concluded that the phials could be divided into two groups, one filled with material completely atoxic to animals, the other filled in error with toxin highly toxic to animals, and, unfortunately, to children. His conclusions were based on three lines of evidence. The children who were ill, and those who died, presented symptoms suggesting that they had all received approximately the same dose of toxin. Secondly, one group of phials contained material completely atoxic in guinea-pig tests, the other group material of uniform specific toxicity. In the third place, no antitoxin could be found in the toxic phials either by direct chemical test, nitrogen determination, or by tests based on the Dale anaphylactic-uterus method. Grassberger further tried by chemical and physical processes to make the atoxic toxin-antitoxin mixture toxic, but failed.

Busson bases his reply on the supposition that all the phials contained atoxic mixture when issued, but that owing to the influence of heat or cold or other agent during storage, the mixture had dissociated so that the toxin was released, and the mixture became highly toxic. He replies to all of the lines of evidence: the course of the disease was different in different children, and, therefore, the ampoules must have contained different quantities of toxin; there were fallacies in the guinea-pig test made during the official investigation, and the tests applied for the presence of serum were fallacious. He further states that Grassberger's own experiments show that an increase of toxicity can be obtained by the use of acids, alkalis, and freezing, and finally that an erroneous replacing of a bottle of mixture by a bottle of toxin cannot possibly have happened during the filling. Unfortunately, the controversy had reached the stage where an accusation of falsification of the laboratory note-books has been made and denied. We do not know if any further legal proceedings in Austria are in prospect.

Should Grassberger's hypothesis be adopted—and many immunologists seem inclined to adopt it—an important aspect of the matter must not be overlooked. The public cannot demand of any human being that he shall never make a mistake. We do not imprison a railway director every time a collision occurs, but we are justified in demanding of the responsible members of a serum institute not only a reasonable degree of skill, but a very high degree of vigilance in their work. Was this lacking at the institute in question? As regards such institutes in general, since the discovery of diphtheria antitoxin many millions of doses of material for injection into

[1] THE LANCET, 1924, ii., 1079, 1086.
[2] Archiv. für Hygiene, 1926, xcvii., 97.
[3] Cent. für Bakteriol., 1926, lxxxiii., 477.
[4] Med. Klinik., 1926, xlii., 1626.

human beings must have been issued, and accidents due to contaminated or faulty materials have been almost unknown. We can, therefore, feel fairly confident that the work is well and faithfully done. So far as prophylaxis against diphtheria is concerned, there is probably more skill and care required in its production than in any other material of the kind used by the physician. In this country mixtures containing toxin and antitoxin have found little favour with the practitioner; he has preferred to use injections, which contain not unaltered toxin, but harmless toxoid and some small amount of antitoxin. Such prophylactics appear to be equally efficient as immunising agents; and they have the great advantage of being safe, even if dissociation should occur as a result of exposure to extreme cold or to the action of any other physical or chemical agent.

MERCURY IN LATE SYPHILIS.

A REPORT[1] on the Effect of Treatment on the Wassermann Reactions of Syphilitic Patients, with special reference to the failure of mercury to prevent Wassermann relapses, has just been published by Prof. E. E. Glynn, Dr. R. E. Roberts, and Dr. Phœbe Bigland. The investigations recorded concerned over 700 cases treated at the Liverpool Royal Infirmary Venereal Clinic between 1918 and 1923. The main lesson to be drawn from this careful study, besides confirmation of the vital importance of immediate and thorough treatment of early cases, is that though mercury is usually efficacious in removing the clinical manifestations of syphilis, it is unjustifiable as a routine to treat a Wassermann-negative syphilitic with mercury alone with a view to the prevention of clinical or Wassermann relapses, or to the cure of the disease by the destruction of any residual spirochætes. In the authors' opinion a Wassermann relapse signifies renewed spirochætal activity, and, therefore, injury to the patient, though they admit that this is sometimes only potential. They conclude from their investigations that while mercury tablet courses certainly do not diminish the tendency to Wassermann relapse, grey oil courses definitely increase this tendency. It is not clear by what mechanism grey oil increases the tendency to relapse, but Prof. Glynn and his co-workers believe that the mercury, unable to attack the inaccessible residual spirochætes, depresses the patient's general health and the immunity on which the destruction of spirochætes chiefly depends. Since arsenobenzol preparations are more potent spirochæticides than is mercury, and since, moreover, they believe that resistant strains of spirochætes are probably developed by prolonged administration of the latter but not of the former, they recommend extra courses of salvarsan rather than mercury for the prevention of Wassermann relapses and the destruction of residual spirochætes. It will be noted by readers that the investigation covered the period 1918 to 1923, when the value of bismuth as an adjuvant in continuation treatment was not yet appreciated. In an italicised footnote to their conclusions the authors make it clear that their criticisms as to the value of mercury refer only to its administration in Wassermann-negative, latent or quiescent syphilis. They state here that its value in clinically active or Wassermann-positive syphilis is not questioned by them, though elsewhere (page 63) it is noted that in clinically active syphilis mercury alone rarely reduces the positive Wassermann to negative. The conclusions reached as to the failure of mercury continuation treatment coincide with those published by P. Fildes and R. J. G. Parnell in 1919—one year after the present investigation was started and four years before its completion—in the same series of Medical Research Council Reports. Of the work of Fildes and Parnell the authors were, surprisingly enough, unaware until their own conclusions were established. Throughout the report it is clear that the clinical importance attached to the Wassermann reaction by the Liverpool workers is very great. They admit that certain authorities regard a relapse to a positive Wassermann in late syphilis as not of necessity signifying spirochætal activity, but since even in the absence of clinical evidence the reaction is regarded as a reliable pathognomonic sign in early cases, they hold this attitude to be illogical, and maintain that the onus falls upon the sceptics to demonstrate at what period of the disease the Wassermann substance mysteriously changes its character and, therefore, its significance. Prof. Glynn and his colleagues themselves state in their introduction that "it will, of course, be realised that this is a study of syphilis at a venereal clinic, not at a neurological clinic, where the diagnostic value of the serum Wassermann is less, as in locomotor ataxia, &c." It seems that even they admit that there is a late stage in the history of syphilitic infection where the clinical significance of the Wassermann reaction becomes less important. Whether this stage is reached comparatively early or very late, the fact now seems to be definitely established that routine inunction of grey oil or the administration of mercury in tablets is not advisable when the disease is no longer active. This is a useful lesson, since the prolonged administration of a recognised cumulative poison is obviously undesirable unless a definite therapeutic result is to be anticipated.

[1] Medical Research Council. Special Report Series, No. 107. H.M. Stationery Office. Pp. 95. 3s. 6d.

MEDICAL FEES IN KENT.

THE Kent Panel Committee has been inquiring into the average fee charged by practitioners in that county to patients of economic position similar to that of insured persons. Of 692 forms sent out 458 were returned and the return was more complete than these figures suggest, since it was rare to receive more than one form from a partnership. Of the 458 only 321 were of use for the inquiry, the remainder having reference to practitioners in public services and institutions, or others who were no longer in general practice. The figures given in the table are based on 321 forms and are believed to represent the average position of some 450 general practitioners. The total number on the panel in Kent is 520. The forms were classified according to the density and type of population into four groups:—

(*a*) Industrial areas, such as Chatham, Gillingham, and south-east London.
(*b*) Urban residential areas—i.e., suburbs of the type of Bromley.
(*c*) Semi-rural areas—i.e., country towns and seaside resorts.
(*d*) Rural areas remote from towns.

The figures in the table between parentheses show the number of returns averaged in each case. The average fee is in every case a fraction of a penny below the actual finding, and where any fee was stated as ranging between two figures, the lower figure was taken in striking an average. The average number on the panels in each group was (*a*) 1303, (*b*) 666, (*c*) 847, and (*d*) 688.

Charge for—	Area (*a*).	Area (*b*).	Area (*c*).	Area (*d*).	All areas.
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*
Consultation at surgery	2 9 (50)	3 5 (75)	3 0 (56)	2 10 (50)	3 0 (313)
Consultation with medicine	2 11 (51)	3 6 (61)	3 3 (49)	3 3 (50)	3 2 (287)
Medicine only	2 4 (49)	2 2 (55)	2 5 (46)	2 4 (50)	2 3 (273)
Visit (mileage extra)	3 7 (52)	4 1 (77)	4 0 (56)	4 0 (50)	3 10 (317)
Visit with medicine	3 11 (51)	4 2 (59)	4 4 (50)	4 6 (49)	4 2 (284)
Normal confinement	53 0 (46)	61 6 (73)	51 0 (53)	45 6 (48)	53 6 (299)

It will be seen that the charge for a confinement is 8*s.* below the average in the rural areas, which are

precisely those in which midwifery is most burdensome. Apparently the rural practitioner with a practice (as judged by his panel) half the size of those in industrial areas has but little advantage in other fees.

MILK AND TUBERCULOSIS.

THE relation between milk and tuberculosis, and the means by which the public should be guarded against the risk of tuberculous milk were touched on by a number of speakers at the National Milk Conference held at King George's Hall, Great Russell-street, on Tuesday of the present week. Mr. Wilfred Buckley, speaking from the chair, said that investigations into a large number of samples of milk, taken in various parts of England and Wales, show about 6·5 per cent. infected with tubercle. This does not mean that anything like 6·5 per cent. of cows are tuberculous, since the milk from one cow in a herd may contaminate a large quantity of otherwise uninfected milk. Dr. Harriette Chick spoke of the serious menace to the health of the community through the infection of children by drinking tuberculous milk. Koch's dictum that the proportion of human tuberculosis caused by the bovine type of the bacillus might be regarded as negligible is now, she said, completely discounted, and the present efforts at securing a safer milk-supply consist largely in attempting to remove the danger of tuberculosis among children. Dr. Nathan Raw, regarding it impracticable to eliminate all tuberculous cows, recommended the immunisation of calves immediately after birth, thus preventing them from acquiring infection in the stalls. In addition to milk itself, butter, cheese, and ice-cream might all harbour living tubercle bacilli. Dr. W. G. Savage said that some 3000 deaths a year in this country are due to tuberculosis of bovine origin. The argument is sometimes put forward that the loss is balanced by the immunity conferred by drinking milk infected with the tubercle bacillus. This implies the assumption that the bovine type produces a less virulent form of infection than the human bacillus. There is, however, no evidence to support this view; a clinician cannot differentiate between the two forms as manifested in the patient; only the bacteriologist can do so. The question of relative virulence has been confused, Dr. Savage thinks, with the question of mode of entry. If the same dose were given by the same mode of entry, it would be immaterial which type of the bacillus was ingested. To give living tubercle bacillus in uncontrolled doses is a haphazard and hazardous proceeding; if immunity by mouth is to be aimed at, it should be by graded and controlled doses. This point was taken up and emphasised by Mr. Neville Chamberlain in his presidential address at the afternoon session. The analogy with vaccination, he said, is not a fair one. Vaccination is carried on only by experts who know precisely what they are injecting, whereas nobody knows what dose of tubercle bacillus is carried in milk or what else the milk may contain. The remedy agreed on by most speakers was pasteurisation.

BRITISH RED CROSS SOCIETY.—An instructional film, showing the drill employed in applying the Thomas splint, will be shown at the house of the Royal Society of Medicine, at 5 P.M. on Monday, Dec. 13th.

THE LATE DR. G. P. JOHNSON.—The death occurred suddenly, on Nov. 8th, at his house at Barlaston, Stoke-on-Trent, of Gilbert Petgrave Johnson, medical officer of health for the county borough of Stoke-on-Trent. Dr. Johnson, who was 58 years of age, received his medical education at the University of Glasgow, where he graduated M.B., C.M. in 1890 and M.D. in 1894. He took the D.P.H. in 1893, and had been medical officer of health for the Potteries since the federation of the six towns in 1910. For some years before that he was in private practice in Stoke. Before going to Stoke, Dr. Johnson was senior resident medical officer at the City Hospital, Liverpool. A zealous and careful official, he devoted his attention particularly to child welfare, maternity health, and the abatement of smoke. He leaves a widow and two sons.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXCVIII.—THE PROPHYLACTIC TREATMENT OF PROLAPSE.

IT is not intended here to discuss the nature of prolapse,[1] but rather its causes with a view to prevention; thus all that need be said in introduction is that "prolapse" will be taken in its widest sense as a generic term signifying the descent of the movable part of the pelvic floor and the viscera attached thereto. The chief difficulty in the problem before us lies in there being considerable doubt as to the precise factors responsible for bringing about prolapse, or rather as to their relative importance. That pregnancy and labour are the primary causes is shown by the vast predominance of the condition in childbearing women. Less than 5 per cent. of cases occur in nulliparæ. That prolapse does occur apart from childbearing shows, however, that, as in other forms of hernia, congenital maldevelopment or weakness of the tissues is an element in its causation, and, therefore, an intrinsic lower resilience of the tissues will likewise play a part in determining the effect of childbearing on women. The proportion of all childbearing women affected is a small one, and the problem is rather that of deciding what are the conditions during reproduction that especially predispose to prolapse.

The common idea is that direct trauma in the shape of perineal laceration is the immediate predisposing factor, but this simple explanation will not suffice. It has long been observed that complete perineal lacerations are rarely accompanied by descent. Most of them are, it is true, repaired at once because of the incontinence of fæces that results. But those in the service of a large hospital frequently see cases of complete perineal lacerations that have been neglected for 20 years or more and eventually come for treatment, but without any prolapse whatsoever. My own experience is that it is unusual to find the two together. On the other hand, laxity of the outlet is almost invariably associated with prolapse, whether in parous or nulliparous women. In the latter the descending mass distends the outlet, so that an overstretched outlet is clearly an effect as well as a cause. Probably, however, over-stretching, deep laceration of muscle-fibres, incomplete healing with fibrous union giving rise to gaping of the outlet play a considerable part in allowing of the bulging of the vaginal walls, especially under strain, and thus facilitating the common type of prolapse in which the parts are dragged down from below upwards. The levator ani pillars (pubo-coccygeus and -rectalis) close the outlet, and with their relaxation, from overstretching or other reason, the vaginal walls tend to bulge through between them as the abdominal contents do from separation of the recti muscles. Weakening of the thin muscular sheet (pubo-cervical) supporting the bladder will allow it to sag down with the anterior vaginal wall. Descent of the vaginal vault and uterus is due to injury and incomplete repair in the sheets of unstriped muscle and condensed fibrous tissue running from the vaginal vault and cervix to the pelvic wall. So long as they remain taut descent of the vaginal fornix and uterus will not occur. Prolapse of the posterior vaginal wall with a pouch of rectum is invariably associated with incomplete perineal rupture and adhesion of the posterior vaginal and anterior rectal walls.

In brief, then, it is the weakening of the attachments of the viscera to the pelvic wall that primarily allows descent to occur. A cystocele will arise from relaxation of the levator ani pillars and the pubo-cervical sheet, and once it is formed it will drag on the cervix. If the cervical attachments are loosened the uterus will be retroverted, so that it comes to lie in the vaginal axis, and then be dragged downwards, bringing with it the posterior fornix and posterior vaginal wall. If, however, the cervical attachments hold, the cervix may stretch and allow of descent of the hypertrophied vaginal cervix, but without descent of the uterus. Cystocele and rectocele may be present with the uterus in its normal position.

[1] The Treatment of Prolapse was dealt with in this series by Mr. Beckwith Whitehouse (THE LANCET, 1923, ii., 1313).

The Timing of Delivery by the Forceps.

The most contentious part of the question is raised when the events during labour most prone to cause weakness of the supporting structures are discussed. The start of the trouble is often ascribed by the patient to one definite prolonged or difficult labour, and probably one such will do more damage than many normal labours (e.g., a protracted second stage with instrumental delivery of an unreduced occipito-posterior position). Rapidly succeeding pregnancies and labours not allowing time between them for full recovery of tone in the supporting structures will also contribute to descent of the pelvic floor.

One rule of obstetrics cannot be broken without grave risk of prolapse, and that is the one forbidding extraction by the forceps before complete dilatation of the cervix. Perhaps the point of the rule would be clearer if it were expressed as extraction before the cervix is fully retracted above the head. If not retracted over the head the cervix is drawn down with the head and the more the cervix resists laceration and the more it stretches, the greater the tension on its all-important supporting structures. I have known of several patients in whom the cervix presented at the vulva soon after rising from lying-in after a forceps delivery. In these cases the less common form of prolapse occurs, in which the cervix and vaginal vault descend first, instead of the more common eversion of the vagina from below upwards. One such case I recollect particularly well—that of an elderly primipara whose first and only labour began in the small hours of the morning and was completed by forceps in time to allow her medical attendant to get home to a bath and breakfast.

The " high " forceps delivery, in which the head is dragged quickly through undilated passages, especially predisposes to prolapse by rapid stretching and possibly tearing of the supports of the cervix and vaginal vault. Powerful uterine action in a quick, natural labour may have a similar effect, particularly in those with feeble muscular tone. The much commoner " low " forceps operation has not the same risks as the uterine supports are not affected, and the soft parts down to the outlet have been gradually stretched by the head. Indeed, there is a considerable weight of evidence to indicate that the prolonged stretching by the head delayed on the perineum may weaken the muscles closing the outlet (in the same way as the prolapsing mass in nulliparæ) more than a timely application of the forceps—say after the head has been distending the outlet for two hours without expulsion being effected.

The Avoidance of Infection and Trauma.

Besides tearing and overstretching, superinvolution or defective involution with fibrosis of the supporting structures is generally accepted as a prominent factor in the causing of prolapse.

The most frequent cause of defective involution is infection with incomplete repair of muscle and replacement by fibrous tissue.

The morbidity-rate rises with all internal interference, while the higher up the tract the manipulation extends, the greater will be the trauma attending it. Therefore the first line of defence against prolapse will be the careful supervision of pregnancy. In view of the possibility of infection of the vagina and cervix from coitus during pregnancy, the danger of sexual relations in the last month or six weeks of pregnancy should be pointed out as part of the antenatal advice ; similarly, sexual relations should not be resumed until at least a week after the lochia have ceased to be blood-stained, while abstinence for the period of involution is the ideal.

All complications calling for internal manipulation, especially those high up the tract, should be avoided. Antenatal examination has greatly lessened the number of "high" forceps operations and other difficult labours due to misfits and malpresentations. The more assistance in delivery can be narrowed down to the low forceps operation the less will be the disability due to prolapse. The strongest argument for manual rotation of the head in a persistent occipito-posterior position is that the undue stretching of the outlet involved in delivery with the occiput posterior is thereby avoided. Hence the principle in management is to allow as long a time as possible for rotation to occur before extracting, and, when delivery is called for, to attempt to make the head follow the normal mechanism.

The careful repair of all lacerations and a strict technique to prevent infection are the natural corollary to the foreseeing of possible complications.

The Management of the Puerperium.

The management of the puerperium presents another possible line of prevention. The revolt against strict rest in bed, introducing the early rising vogue, was due to a recognition of the evils of muscular wasting and general sluggishness associated with the old rigid system. The most generally satisfactory middle-course is that of modifying the routine for the individual patient, allowing her to rise to empty the bladder and bowels, encouraging movement in bed, and starting massage and physical exercises (bed gymnastics) so as to lessen physiological sluggishness whilst maintaining full nursing control and rest for the patient and ensuring her relief from other duties.

Bed exercises are valuable—breathing exercises for the abdominal muscles, contracting of the levator ani, by squeezing up as if to hold a motion, in combination with resisted movements of the adductors of the thigh and various leg and body movements. A particularly valuable exercise can be carried out as soon as the lochia become dark in colour and after sound healing of a perineal laceration—it is that of the contraction of the levator ani with the patient on her back, the knees drawn up, the feet flat on the bed, and the pelvis raised so that she is in the Trendelenburg position, thus taking the weight of the abdominal viscera off the pelvic floor. While " squeezing up " she is told to bring the knees together, the nurse or other attendant resisting this movement by holding the knees apart. Contraction of the adductors of the thigh and levator ani are associated movements that when made together bring both strongly into action.

For a couple of days before rising the woman should be made to sit on the edge of her bed for ten minutes or so, morning and evening, doing bending and heel and toe movements, and thus gradually accustoming herself to bear the weight of her body on her lower limbs.[2]

Should any complications be present to make the early adoption of bed gymnastics inadvisable, massage of the abdominal and back muscles and of the limbs may be substituted until the patient's condition permits her to begin active muscular movements. Frequent change of position and abdominal muscular exercises facilitate drainage from the uterus and vagina and so promote healing. These movements entail the discarding of the abdominal binder which should be reserved for special cases and at the most for a day or two after labour. It merely splints the abdominal muscles and lessens their physiological activity.

The Restoration of Muscular Tone.

Some women, especially those of an over-sensitive and introspective type, after resuming their household duties complain of backache and " bearing down "—doubtless due to weakness in the supporting structures —though little can be discovered in explanation of their symptoms. Usually these symptoms are aggravated by fatigue and especially by standing about, but it is difficult to persuade these patients to take the outdoor exercise that is essential to a restoration of their muscular tone. In some of them the uterus may be retroverted and bulky, showing laxity of its supports and subinvolution, or the outlet may be lax and bulge or gape on straining. Replacement of the uterus and a ring pessary for a few weeks with continuance of the exercises will help to give them confidence to take out-door exercise and, so long as the pessary is not worn for more than three months or so, will do no harm.

In conclusion, the points to be emphasised in the prevention of prolapse are first to secure normal function and avoid complications in labour, especially those from malpresentations and misfits, and to prevent infection. Next a rational management of the puerperium, in which the restoration of function in the muscular supporting structures is the chief objective. Finally, on the return of the woman to her ordinary occupations, care should be taken to relieve symptoms indicating weakness of the supporting structures by efforts directed towards improvement of the general physique.

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[2] Details of these exercises may be found in the Practitioner's Encyclopædia of Midwifery and the Diseases of Women.

Special Articles.

MEDICINE AND THE PRESS.

DISCUSSION AT A MEETING OF THE HUNTERIAN SOCIETY.

AT a meeting of the Hunterian Society held on NOV. 15th at the Cutlers Hall, London, E.C., Mr. MORTIMER WOOLF, the President, presided over a large gathering of men and women.

Lord RIDDELL opened a discussion of this subject. He read the warning notice on advertising issued in June, 1923, by the General Medical Council, whose functions he outlined. He then read the manifesto published by the British Medical Association in July, 1925, in which the Association stated its position in relation to the practice of advertising and claimed to have influenced the G.M.C. to issue this warning notice. He deduced from these pronouncements that a doctor who wrote for the press under his own name took his professional life in his hands, and that a word of editorial praise might bring him under the ban of the G.M.C. The action of the G.M.C., a purely judicial body, in issuing a warning notice at the instigation of the B.M.A., without a test case, was he thought, probably illegal. The duty of the Council was to try cases of alleged infamous conduct, not to lay down rules. He was a strong trades-unionist, but could not approve of a trades-union, such as the B.M.A., exercising judicial functions, especially as it did not represent the whole profession. Moreover, the law, as laid down in the Court of Appeal, defined infamous conduct as that which would be reasonably regarded as disgraceful or dishonourable by his professional brethren of good repute and competency, and this conduct did not include the writing of articles to the press, so long as they did not exalt the writer or run down another practitioner. Lord Riddell suggested that, although bulletins served a useful purpose in informing the public of the progress made by an important man suffering from illness, the medical men who signed them might run the risk of being accused of advertising. Again, he asked why it should be improper to write a newspaper article and laudable to write a five-shilling book. It was open to any medical man to write a book, have it well reviewed, and print laudatory excerpts on the front page of THE LANCET where it would be much read by hypochondriacal laymen. Nobody wanted a race of advertising doctors, but he suggested that if medical authors were given absolute freedom the public demand for them would speedily end.

Sir HUMPHRY ROLLESTON expressed his agreement with much of what had been laid down by Sir Thomas Horder at a previous discussion on this subject. It was important to remove the impression shown by comments in the press that the medical profession was obstructive or adverse to health propaganda. Education of the public in the "laws of physiological righteousness" was an essential factor in the campaign against disease. The press was a great educator and its power for good or evil was unrivalled. Some public instruction in preventive medicine should undoubtedly be carried out in the lay press, but the public should be told much about preserving a healthy condition of body and little about the actual details of disease—in fact, only the early symptoms of grave conditions formed really valuable information. There was an essential difference between works on professional subjects and writing in the lay papers for an audience of possible patients. The less healthy people knew about disease the better for them. A periodic overhaul by a doctor would effectually relieve anxiety. The main question on which the lay press and medical opinion differed was whether or not articles in the lay press should be signed by medical men in practice, since the writers were inevitably advertised thereby and probably estranged their silent brethren. Unsigned medical articles were said to be poor copy for the press, but leading articles on other subjects formed and guided opinion. It seemed inconsistent that the press had unanimously condemned Sir Thomas Horder's suggestion of an advisory board of medical authorities who should guarantee the efficiency of the writer of an unsigned article. No doubt certain articles signed by eminent names had done great good, but if everyone were to write the door was opened to self-glorification and advertisement, and how was a line to be drawn? The press naturally wanted news, but what was new was not necessarily true and the public might well be led astray by honest enthusiasts. It was unlikely that the press would consent to publish only articles on general hygiene. On the whole, it was undesirable that men in practice should write signed articles for the lay press.

The idea that an eminent man could do things that a lesser man would not be allowed to do with impunity was widespread, but he had known of no instance that justified this impression; many persons at the top of the tree had been called upon to give account of themselves. Nor had he ever heard of anyone being hauled up for "conduct infamous in a professional respect" on account of a bulletin.

Mr. W. J. EVANS, disclaiming any knowledge of the difference between the G.M.C. and the B.M.A., said that the newspapers, especially the working journalists, had a distinct grievance; the journalists had been blacklegged as long as he could remember by members of all other professions, who demanded much more for their articles than the journalists obtained. The newspaper was the playground of the journalist and he was the only man who had the right to write therein. He would say for the doctors that they did usually write their own articles when they signed them. Not a newspaper in the world would be likely to publish an article on a "new cure" because no member of the profession would tell them anything about it. It was this extreme unwillingness to tell the facts that was responsible for half the trouble between the medical profession and the newspapers. He did not see what harm there could be in signed articles telling people what they all knew before. Medical news was at one moment a boom and after a boom came a slump; if medical journalism ceased for three months there would be no more demand for it. He suggested that the unfortunate word "advertisement" should be changed to "propaganda." The only possible harm followed articles which extended to regions where there was no fair measure of agreement, while much of the distrust of medical men arose from the fact that they so rarely said the same things.

Dr. E. GRAHAM LITTLE said that it was the intrinsic worthlessness of these contributions to the lay press that was troubling the medical profession; the difficulties of contributing information worth giving were almost insuperable. How far it was possible to convey serious information through the lay press should be the subject of consideration; he did not think that the columns of the lay press were the best place; even if the press would accept such serious articles the public would not believe them. Reports in the lay press usually extracted the frivolous part of a lecture and ignored its real purpose. The medical papers might be used, at least initially, for the exposition of medical advice to the public. It would be to the advantage of medical writers to learn to express themselves simply and to have the wise censorship of a trained staff of medical journalists. The committee of lay and medical representatives proposed by Sir Thomas Horder as a board of reference would be too cumbrous. There was more serious danger than was realised in giving premature publication to unsubstantiated scientific knowledge, and medical communications might come to be offered first of all to lay papers instead of being submitted to the cross-fire of medical criticism. Payment by results should not be applied to research work and the workers

themselves would much rather confirm their work before publication. The less reputable organs of the press were apt to regard medical subjects as so many opportunities for stunts. Another disadvantage of articles in the lay press was the focusing of individual readers on their own symptoms leading to a huge consumption of patent medicines. A healthy instinct was, he thought, a much better guide to such things as diet than any amount of advice in the papers.

Dr. J. M. BULLOCH expressed the opinion that if a medical man really wished to advertise, neither the B.M.A. nor the G.M.C. nor any number of associations would stop him. The name of a persistent contributor to small specialised journals was bound to filter through the "liaison journals"—as he termed THE LANCET and the *British Medical Journal*—to the daily press. The question of medical advertising in the press had arisen with the change that had taken place in the attitude of newspapers during the last 40 years. Whereas a paper used to be the servant of the public and news, now it printed news to support its own views, when it was interesting, and it might be impossible to stop papers dealing with a subject as interesting to the public as medicine. A paper could not afford to retain even medical students on its staff and had to try to deal with individual experts. It had once been considered indecent for a man or woman to mention personal ill-health, but now the subject was frankly discussed, and the present publicity given to illness was not the fault of the papers, which were meeting a public demand. Anonymous articles had gone by the board, and it was natural to require names for publication. The only influence that would check advertising was the good spirit of the profession itself. Medical men who wrote much fell in the estimation of their fellows.

Dr. LEONARD WILLIAMS said that the public no less than the profession had got into a state of militant hysteria on this subject. There never had been and never could be any such thing as a rule or law prohibiting medical men as such from writing under their own names in the lay press. The warning notice said that if members of the profession must write for the lay press they should remember that they were gentlemen and members of a gentlemanly profession; that was the gist of the whole matter. No one had ever been reproved or reproached by the General Medical Council for writing for the lay press. He had, however, two objections to the warning notice. One was that it went into the matter of the motives of the people who were supposed to have offended—a very difficult matter. Secondly, it was sent out to anybody who had written an article at the instance of anybody who notified the Registrar. So the machinery of the General Medical Council could be employed for private ends. Writing in the lay press under a name was not calculated to fill a consulting-room, in his experience. The British Medical Association was not the only Association that could act as "common informer" to the G.M.C.—there were the defence associations; but if the medical profession were dissatisfied with any of these bodies the remedy lay in electing to their government persons in whom they had more trust. The press, in many instances, was just as capable of judging when an article was objectionable to the public as was any ethical committee. He held that it was the duty of those of the profession who could write to educate the public. The elementary laws of health and personal hygiene had never been taught to anybody, and the result of "a silent profession" in the past was that the war revealed us as a C 3 nation. By remaining silent the profession laid itself open to the disgusting imputation that it pursued the policy in order that people might remain ill to benefit the pocket of the doctor.

Dr. T. HYSLOP said that this question would find its own level. We had heard much of it, expressed in language both temperate and intemperate. There was not much fear for the profession, as men who advertised would always fall in their fellows' esteem, but there was cause to fear for the sake of the public. If one column in a newspaper gave legitimate information on health matters, others talked the most contemptible nonsense. It was time a truce was called in what was becoming a tedious controversy; enough had been said to make every medical man realise the gravity of the situation.

Lord RIDDELL briefly replied, reiterating the view that the G.M.C. had exceeded its functions in the matter of the first warning notice.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Dublin University Biological Association.

ON Nov. 13th, in Trinity College, Mr. R. Atkinson Stoney, President of the Dublin University Biological Association, read an inaugural address on cancer. He covered the entire field of cancer research in a clear way, and discussed the various methods of treatment in vogue, concluding with the opinion that surgery, practised early, still offered the best prospect of cure or alleviation. Mr. Stoney went on to say that at the Royal City of Dublin Hospital they had started a special department for the treatment and investigation of cancer. They had taken over a deep X ray installation from the Coombe Hospital, and were enlarging the hospital and setting aside special wards for cancer patients. It was hoped before long to enlarge the scope of the hospital to embrace investigation of other methods of treatment.

A vote of thanks was moved by Mr. A. Fullerton, President of the Royal College of Surgeons in Ireland, who recounted several cases illustrative of the various problems which arose in regard to cancer. Prof. T. G. Moorhead followed, and made a plea for the education of the public in regard to the early symptoms of malignant disease. This plea was enforced further by Mr. W. Doolin, and Mr. K. L. G. Gunn discussed some broader questions arising out of the consideration of cancer.

A Research Institute for Cancer.

In Mr. Stoney's address to the Dublin University Biological Association he announced the establishment of a Research Institute for Cancer in connexion with the Royal City of Dublin Hospital. It is understood that the directors of the hospital, with the aid of a grant from the British Red Cross Society and of some subscriptions from private sources, have taken a house neighbouring to the hospital, and have fitted it with beds for patients suffering from cancer. Research will be carried on under expert guidance. A scientific committee has been formed, on which the various scientific bodies in Dublin, and the several medical schools will be represented. It is probable that a public announcement of the scope and intentions of the institute will shortly be made.

Physical and Mental Disorder.

In his presidential address to the Ulster Medical Society on Nov. 4th Dr. M. J. Nolan drew attention to the relationship between bodily disease and mental disorder. The normal mind he imagined as a team of physical and psychical factors working in unison, failure in which resulted in dissociation and loss of control. The transmission of the tendency to this failure constituted the so-called insane heredity, which, though not necessarily expressed, rendered the individual liable to breakdown under adverse circumstances. The failure might be of any degree—from idiocy to transient psychical disturbance. Discussing the physiogenic and psychogenic factors called for in official returns, Dr. Nolan suggested that the official factors were too restricted and that to "sexual excess" should be added "sexual deprivation, voluntary and involuntary," and that diseases of the endocrine and lymphatic systems should be included. He laid stress on the evil consequences of contraception as tending to excess. Alluding to the difficulties that faced general practitioners in regard to

certification, Dr. Nolan said that for all practical purposes Mercier's formula, "Insanity is a disorder of the process of adaptation to self," was the safest guide. The same basic instincts and emotions were in operation in all varieties of insanity, but combined in groupings different in kind and degree. The psychological types of character determined the particular form of insanity in each individual, and each individual must be regarded as an entity. In the majority of cases the onset of functional or organic disease could be definitely fixed as the starting-point of the obvious mental disturbance. The symptomatology of insanity, said Dr. Nolan in conclusion, necessitated segregation and treatment by specialists in mental disease, working with a medical staff dealing with general, medical, and surgical work, including pathology and research. The present system could not deal with so-called insanity as efficiently as it might be dealt with, and a more and intimate knowledge of the subject should be gained by students and practitioners.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Tuberculosis in India.

BEFORE leaving for England recently Dr. C. Muthu gave an interesting address on tuberculosis and its treatment in relation to conditions in India. Dr. Muthu has been doing a considerable amount of propaganda work in this country and has helped to create public interest. He has opened a free tuberculosis dispensary in Madras and a home in Pallavaram (Madras Presidency) for the treatment of the disease, and Government has provided land at Thambram for a sanatorium and garden colony which Dr. Muthu hopes to develop soon after his return from England. During his 27 years' campaign against tuberculosis, he said, he had found no specific remedy to cure the disease. All serums and vaccines for tuberculosis had been more or less failures in the long run, and the indiscriminate injection of tuberculin by qualified and unqualified men in India had done immense harm by rousing latent disease, thus killing more people than it had cured. Tuberculosis, he pointed out, was a constitutional disease, taking many years to develop, and there was no royal road to its arrest. The only cure was Nature's cure—the only treatment was to raise the patient's powers of resistance by fresh air, good food, better housing, and more healthy environment. Food, in Dr. Muthu's opinion, was more important than freedom. Tuberculosis was a poverty and filth disease, and it was the duty of Indian reformers and leaders to give attention to improving the health and efficiency of the people. Then, and then only, would a disease like tuberculosis gradually die out as it had done in other countries. Next to food in raising the vitality of the people was the care of women and children. In this connexion he strongly recommended that school hours for boys and girls should be changed to 7 A.M. to noon or 8 A.M. to 1 P.M., including a short interval; children could not take in any knowledge in the hot hours of the day, and the heat imposed a great strain on their growing brains. There was a demand now for tuberculosis sanatoriums all over the country, and this demand would become more insistent as time went on. Sanatoriums alone, however, would not get rid of tuberculosis, though their establishment was undoubtedly the first step, and a very important one. Its good effects would be seen in a few years in the education of the public in all matters of hygiene, sanitation, and right living, the after-care of patients being, of course, as important as sanatorium treatment. In combating tuberculosis, said Dr. Muthu in conclusion, there must be a combined and well-organised scheme to deal with all phases of treatment. This was the reason why a sanatorium and a garden colony met the needs better than a sanatorium alone.

Epidemic Diseases in Madras Presidency.

The annual report of the administration states that cholera was very severe during the year 1924-25 compared with the two previous years. In Trichinopoly, where 1511 deaths from this disease were reported, the outbreak is said to have been due to the failure of the protected water-supply owing to the bursting of the main at the time of the Cauvery floods. Mortality from small-pox fell from 2353 to 1623, and of this total Rajahmundry alone was responsible for 579, or more than a third of the total deaths. There was considerable improvement in the vaccination work, the number of successful cases rising from 92,880 to 133,491—i.e., from 37·1 to 53·3 per 1000 of the population. In addition, 35,352 cases were successfully revaccinated. Plague was responsible for 1955 deaths, as compared with 1331 in the previous year. Of this total 1165 deaths occurred in Salem alone, while Periykulam reported 256, Dharapuram 205, and Pollachi 204. Influenza was practically absent throughout the year.

Indigenous Medical Systems.

A month or two ago the Government of the United Provinces established a Board of Indian Medicine to advise the Government on all questions connected with the ancient systems of medicine. This Board, over which a layman presides, will prescribe courses of study, appoint examiners, confer diplomas and degrees, register practitioners, and distribute Government grants. The Government has also accepted a recommendation that the Ayurvedic College of Benares and the King's (Unani) Hospital at Lucknow be raised to the status of State-aided colleges. Discussing the work of the new Board, the *Pioneer* points out that although before the reforms the encouragement of indigenous medical systems was frequently discussed, it never got anything more than sympathy from the Government, and certainly such systems would never have been officially recognised. Yet, says the writer, whatever their abstract merits, the Ayurvedic and Unani systems inspire a certain amount of confidence in the people at large and it would be foolish to disregard the knowledge acquired and handed down through many generations. A more convincing argument, perhaps, is that the facilities for European medical treatment in rural districts are still meagre, and there is scope for Indian practitioners to do what they can in providing relief in these areas. Wherever the various systems are in competition they may safely be relied on to show their respective merits as time elapses. In Madras Presidency there are 13 Ayurvedic dispensaries and one Unani dispensary maintained by municipalities, and an application recently came before the Bombay Corporation for funds to maintain a local dispensary at which, it is stated, there is a large and increasing attendance.

Elimination of Malaria.

Some time ago Major H. W. Acton, director of the Calcutta School of Tropical Medicine, issued an appeal for funds to establish a chair of malarial research. His appeal is associated with the name of Sir Ronald Ross, who is shortly to pay a visit to India, and the chair would be set up in the hope that methods could be devised for eradicating the disease in the various districts of India, each of which presents its own problems. Commenting on the proposal, the *Times of India* says that "a memorial scholarship named after Sir Ronald Ross would be an excellent thing; but so long as what we are pleased to call the First City in India is 'reeking with malaria' such a memorial would be a gibe instead of a grateful tribute." A clean and healthy Bombay would be a more proper monument. For practical purposes, it is suggested, enough is already known of the habits of the mosquito, and what is wanted is an army of inspectors trained to deal with the breeding-places of anopheles. Such work should be undertaken and financed by the municipality, but owners of property where mosquitoes breed should be made to feel their responsibility, as in other parts of the world. A permanent advisory

committee will probably be set up to coördinate measures against malaria in Bombay, but will not be given executive power as the military, the G.I.P. railway, and the Port Trust authorities have their own staffs engaged in this work. The Corporation, it is stated, has ample powers for the reclamation of low-lying land.

Flannel Shirts.

The shirts of the army in India have hitherto been made exclusively of flannel, and no other material has been recognised by the Regulations; they have been issued impartially to all troops, whether suffering from heat or from cold. A new Army Order permits both British and Indian troops to maintain a couple of cotton shirts in place of the flannel. Too sudden and violent a reform, however, is guarded against by the provision that the Ordnance shall not issue cotton shirts and that their use cannot be allowed on service. The official reluctance to dispense with universal flannel is, of course, an expression of belief in woollen garments as a protection against chill, and is consistent with the use of body-belts in the tropics. A young soldier, free to wear cotton clothes, may be less careful to keep warm at sundown than the more experienced resident.

An Antirabic Centre.

During the year ending Feb. 28th, 1926, 572 patients were treated at the Pasteur Institute of Southern India, Coonoor. In addition 4644 patients received antirabic treatment at local centres. The report of the director, Lieut.-Colonel J. W. Cornwall, states that statistics collected over a number of years show that on the average 1 out of every 36 persons bitten by rabid animals dies of rabies after treatment with serum, whereas the death-rate amongst those untreated is 1 in 16. It is calculated that during the 12 years 1913–24 at least 60,000 people in the Madras Presidency were bitten by rabid animals, and that about one-sixth of them received treatment. At the end of February last the virus at the Institute was in its 973rd passage.

Medical Relief in the Punjab.

A scheme of medical relief formulated by the Punjab Government last year arranges for the opening of 375 dispensaries as soon as possible. One dispensary is to be furnished either for each 30,000 of population or for each 100 square miles of territory, as may be best adapted to local conditions. Besides rural dispensaries it is intended to have a hospital of 12 beds for each tahsil (corresponding roughly to a rural area) and a first-class hospital at the headquarters of each district (county). These hospitals will be centres to which the more serious medical and surgical cases can be sent from village dispensaries of the surrounding area.

An Indian Nursing Service.

A Nursing Service for Indian Troops' Hospital has been constituted as from Oct. 1st. This service will be formed of lady nurses recruited within Indian limits for employment in hospitals for Indian troops. The nurses will supervise, train, and instruct the nursing section of the Indian Hospital Corps.

A Bill for the registration of medical men in Delhi and the Frontier Provinces has been published. The Punjab Medical Council will control registration in these two areas, which will be represented on the Council by three members.

In accordance with the recommendations of the Cattle Committee appointed last year it has been decided to establish breeding herds at Patna and Cuttack, where there is a large demand for milk. At the Patna farm plant for pasteurisation will be provided.

Army contractors have submitted a petition against the proposed creation of a branch of the Navy, Army, and Air Force Institute in India to replace the Army Canteen Board which is being abolished.

Two prominent Parsis have made an offer of 32 lakhs of rupees (nearly £250,000) to build a medical hospital adjoining the King Edward Memorial Hospital so that this institution may be reserved entirely for surgical cases.

During 1925 over 642,000 rats, alive or dead, were sent by the Bombay municipality to the Haffkine Institute to be examined for plague. Up to the end of the year the Institute had supplied nearly 26,000,000 doses of plague vaccine, for which, it is stated, there is an increasing demand.

It is reported that about 500 prisoners in the Hyderabad (Sind) central jail have contracted scurvy.

The Lady Chelmsford All-India League for Maternity and Child Welfare is arranging a conference to be held at Delhi in February.

The annual report of the Madras Medical College notes an increased percentage of failures in medicine, surgery, and midwifery which is partly attributed by the principal to the change in character of the examination, greater importance now being attached by examiners to the clinical and practical sides of each subject.

BUCHAREST.

(FROM OUR OWN CORRESPONDENT.)

Competition against Doctors.

THE majority of Rumanian practitioners are having a hard struggle for existence. Some superficial observers believe that the cause of this is an undue increase of the number of physicians, and that we are approaching the so-called mental proletariat. Certainly this has something to do with it, but it is not the origin of the trouble. According to Dr. E. Spirt, who gave a lecture on this subject at a recent meeting of the Rumanian Medical Association, the real cause is the all-round illegal competition which the profession has to put up with. First of all there is the competition of medical students; some 80 per cent. of the students who have attended two sessions and learnt to give an injection and to use surgical dressings begin to practise at once, instead of attending the university lectures, and they freely advertise themselves in the papers. There is hardly a single family in Bucharest which has not a relative who is a medical student and whom they recommend to their friends, thus distracting a great number of patients from the qualified doctor. Dr. Spirt mentioned, for instance, the case of a fourth-year student who has at his home a gynæcological table and a regularly equipped consulting-room, and, of course, as such students do not pay taxes and have no family, they are able to treat patients at greatly reduced fees. Another anomaly is the attitude of midwives, who openly advertise that they receive and board female patients and obstetric cases. It would be difficult to find any midwife who does not practise not only gynæcology, but also general medicine—let alone the procuring of abortions, which is a side industry. It is strange that even the chemists, whose interests are allied to those of the medical profession—since doctors do not dispense their own medicines—do great harm as competitors. Most dangerous amongst them are those who have the degree of "doctor." Seeing this word on their boards, the public think that they are medical doctors, and this source of error is often exploited. Lately a case came before the County Court, where a pharmacist who kept a profitable consulting room in the outlying part of the city was sued for unskilful treatment, and fined by the Court. There is also a class of patients who never consult a medical man, but go straight to the chemist's shop, where, perhaps, they get medical advice from some junior apprentice and buy from him the most expensive medicines. Druggists, who are forbidden to sell compound medicines, do great harm to the doctors by selling specialties to patients without medical prescription, and by supplying them even with

opiates, morphine, cocaine, and ether, not to speak of corrosive sublimate, aspirin and pyramidon, which are sold wholesale as regular household remedies. Not less harmful is the competition of barbers and other quacks. Some of them affix the title of "Chirurg" (surgeon) to their name-plate, and perform minor operations, extract teeth, give injections, and apply surgical dressings. Recently a barber sued a "patient" for unpaid fees, and proudly alluded to a whole series of persons whose gonorrhœa, gonorrhœal rheumatism, and ulcers he had cured. The difficulties of the doctors are also greatly increased by the innumerable so-called Mutual Aid Societies against Death and Sickness; it is no exaggeration to state that in Bucharest alone there are 80 of these societies. Every one of them registers at least three or four thousand members, mostly families, and each employs two or three physicians, generally paying them 3,000 to 5,000 lei (£3 to £5) a year—less than the wages of a butler. By exploiting medical work at salaries which should rather be called tips, the societies manage to accumulate large fortunes. The Medical Association appreciates the importance of speedy action, and has appointed a commission to devise legislation for the remedy of this deplorable state of affairs.

Campaign against Venereal Disease.

In the post-war years the amount of venereal disease increased very considerably in Rumania. The increase is most noticeable in the small towns and villages, where the population—the clean, rustic folk—was more or less exempt from venereal disease before the war. The Rumanian Government realised at once that the best weapon against this evil is the enlightenment of the public, and accordingly organised several expeditions, in which skilled medical staff travel on caravan motor-cars from village to village, giving explanatory lectures on the importance of early medical treatment and on the prevention of these diseases. The motor-car is equipped with a small laboratory for treatment, and for taking specimens of blood. Explanatory leaflets are distributed among teachers, priests, and other intelligent men, instructing them how to carry on and continue the work thus begun. In large towns free dispensaries have been set up, where venereal cases get free treatment. The Chamber of Deputies passed a law obliging doctors to notify all fresh cases of venereal infection—omitting the names of the patients—and the data thus collected have shown a decided diminution in the number of fresh infections in recent years as compared with those just after the war. Notification has also revealed the fact that the institution of licensed houses does not in any way contribute to the decrease of venereal infection; it even shows that venereal disease is chiefly distributed by the brothels, where the resistance of men is considerably influenced by the action of alcohol. This has induced the Government to consider the abolition of licensed houses; from the end of this year the system will be discontinued in certain cities, and if the results are satisfactory the change will be made universal throughout the country.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

A Congress of Urology.

THE Seventh Congress of the German Society for Urology was held in Vienna during the first week of October under the presidency of Prof. Viktor Blum (Vienna). The attendance was large, and besides representatives from the German-speaking countries, a number of surgeons came from France, the United States, Italy, Switzerland, Russia, Turkey, and Czecho-Slovakia. More than 150 papers were read dealing with three main subjects—the pathology and treatment of anuria, the pathology and treatment of malignant growths of the bladder, and the significance and treatment of pain in urological practice. The last of these was discussed on the first day. Prof. P. Albrecht (Vienna) reporting on his experiments with general anæsthetics in urology, stated he had come to the conclusion that chloroform should not be employed in this work and advocated the use of dichloren, a comparatively new but useful and harmless anæsthetic.[1] Dr. O. S. Lowsley (New York) expressed himself as strongly in favour of local anæsthesia, and showed excellent photographs and films to illustrate his method of regional infiltration in urological operations. Dr. G. Illyés (Budapest) also recommended purely local anæsthesia, on the strength of experience in 700 operations on the kidney, besides work on the ureter and bladder. In the discussion the majority of the surgeons were in favour of the local method, and, in summing up, the president pointed out that the large majority of urological operations can now be done under local anæsthesia, which is, of course, especially useful where the condition of the patient makes general anæsthesia risky. Each case must necessarily be judged on its merits, for both methods have their advantages and disadvantages.

The opening paper on anuria was read by Prof. Theodor Fahr (Hamburg), who discussed the morbid anatomy of the condition, showed the atrophic state of the kidney-tissue, and the microscopical features of acute anuria, and emphasised the need for clinical observer and morbid anatomist to join forces so as to clear up the many problems which the condition still presents. Dr. Paul Jungmann (Berlin) pointed out that anuria can be produced by factors in the kidney itself (inflammation destruction of tissue) or by external factors such as a fall of blood pressure, or a loss of body fluids, or the action of toxins. The treatment of anuria—especially of the so-called reflex anuria—was discussed by Dr. Hans Rubritius (Vienna), who said that when there was no mechanical obstruction, decapsulation might be useful. On the whole, it must be admitted, the discussion did not bring out any very novel views of the development or treatment of the condition—except, possibly, a contribution by Dr. Lichtenstern (Vienna), stating that reflex anuria can only occur in the presence of an already damaged kidney.

Dr. L. Casper (Berlin) reviewed the methods of making the upper urinary tract visible by the use of liquids relatively impermeable to X rays. The problems of the physiology of the ureter and its occlusion were freely discussed and experiments were reported on production of cystic dilatation in the lowest part of the ureter and on denervation of the ureter, which causes, it is asserted, a dilatation of the renal pelvis.

The last day was devoted to considering malignant disease of the bladder. In spite of decided progress, the pathology and treatment of vesical tumours is still somewhat obscure. In the present state of knowledge the treatment should be radically surgical, but often it is ineffective, particularly as neither patient nor surgeon is willing to sacrifice the whole bladder where only a small carcinoma is present. No operation other than total extirpation of the bladder can, however, be expected to give satisfactory results in malignant disease, even where the lesion is of slight extent. In the discussion it was pointed out repeatedly that it is better not to remove a cancer of the bladder at all than to perform non-radical operation, for insufficient removal of the tumour is likely to cause rapid propagation of the disease. Ulceration and hæmorrhage can be controlled by intravesical methods such as fulguration or thermo- and chemo-coagulation, and the chief complaints can be soothed in this way. An interesting paper was contributed by Dr. Karl Scheele and Dr. Oppenheimer (Frankfort) on the Appearance of Vesical Tumours in Labourers Handling Aniline. They consider the formation of tumours in these workers to be due to chemical irritation by aniline and to its disintegration or splitting; the handling of end-products does not cause the lesions. Dr. Bauer (Vienna) has produced

[1] THE LANCET, 1926, i., 154.

vesical tumours by repeated painting with tar; these new growths, however, differ in their histology from all other known vesical tumours. Dr. F. Oehlecker (Hamburg) described the advantages of blood transfusion both before and after operation, and Dr. Salib (Constantinople) showed an interesting case in which there was a double penis and other malformations of the urogenital system.

Death of Prof. Ehrmann.

The name of Prof. S. Ehrmann, who died unexpectedly a few days ago, was well known beyond the narrow frontiers of our small Republic. Born in a Bohemian village in 1854, he took up medicine in Vienna and soon became celebrated amongst the students and professors for his gift for drawing. Prof. Brücke made him assistant in the Physiologic Institute, and there Ehrmann undertook his first important contribution to science—an investigation of the formation of pigments in the skin and the cause of the different colours of the various human races. Definitely turning to dermatology, he studied under Kaposi and Neumann. As long ago as 1887 he was investigating the course of syphilitic infection in the human body, and was working at the histology and physiology of the skin, thus laying foundations of our knowledge of the relations between skin diseases and metabolic changes. He was the first to show the presence of spirochætes in the nervous substance in tabes and general paralysis of the insane, and his excellent illustrations—all painted by himself—of skin conditions in health and disease, as published in his "Diagnostic Atlas of Dermatology," are remarkable in their technique. The fight against venereal diseases was part of his life work and he stood foremost in this campaign. He also attained an enormous private practice, owing to the knowledge and skill that he possessed. A very short, disproportionately built person, he had wonderful artistic feeling and knowledge, and got together a fine collection of treasures, besides assisting many artists and painters. In spite of severe handicaps through his religion—he was a Jew—he managed to attract a large number of students to his private laboratory and hospital wards, and his pupils have attained high standing all over the world.

SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

Medical Congresses at Pretoria.

A SERIES of medical congresses were held at Pretoria in October—the most important being the South African Medical Congress. The decision to form a Federation of the British Medical Association in South Africa and the South African Medical Association was the subject of congratulation by Lord Athlone, who addressed the delegates at a banquet held in their honour. He added that the Great War had opened our eyes to the number of persons who were unfit from preventable causes, and that there was now a widespread belief that the human wastage caused from ill-health could be very much reduced. It was to the medical profession that they looked for the guidance of the nation's aspirations towards better health, which were often confused and ill-directed, into proper channels. The child welfare conference was held on Oct. 12th. One of the most interesting papers contributed was read by Dr. J. J. Boyd, medical officer of health, Pretoria, on "Maternal Mortality and Morbidity." Dr. Boyd recommended that a post-graduate course for medical practitioners, trained nurses and midwives should be provided at several of the larger towns of the Union; also the establishment of antenatal clinics in larger towns. He advocated the control of midwives by the local health authorities, and a Government subsidy for qualified midwives in rural districts.

Dr. J. A. Mitchell, Secretary for Public Health, congratulated Dr. Boyd on his paper, and said that the Government Health Department felt the need for more statistical data. More and better trained midwives were wanted in South Africa, for unqualified, ignorant, and dirty midwives were taking a heavy toll of both mother and infant. Dr. Mitchell advocated a state-subsidised medical service for the rural areas. A paper on Birth Control, read by the Rev. J. B. Watson, was followed by a lively discussion. Mr. Watson, dealing with the need of a better race and with the tendency to over-population, considered that it would not be unreasonable to ask that the mating of the diseased, unfit, defective and degenerate should be prevented. There should be prohibition, he submitted, of early marriages. In one year in the Transvaal 700 girls under 17 contracted marriage. Dr. Jane Ruthven held, on the other hand, that the hindrances to marriage should be curtailed. and Mrs. Miriam Walsh (Capetown) and others pointed out the paramount value of white children to South Africa.

On Oct. 14th Dr. George Campbell, the new President of the Child Welfare Congress, proposed:

"That the necessity be urged for sterilisation of the mentally deficient, both white and coloured, where such incurability is an active menace to the patients themselves or to the welfare of future generations, or, alternatively, segregation in colonies, preferably farm colonies."

Sterilisation, he said, was an extremely simple operation which did not interfere with the life of those operated upon, and it was the duty of those who were fit to prevent the bearing of children who would be incapable of facing the world. It was often said that it was cruel to interfere with Nature, but in his opinion the unrestricted effects of Nature were more cruel still. The resolution was seconded by Dr. Shadick Higgins, who favoured segregation of the mentally deficient. Mr. A. A. Stanford, the Johannesburg children's magistrate, speaking of propagation by people of low mentality, said that one Johannesburg family had directly cost the State £2000. Dr. Campbell's resolution was passed with only six dissentient votes. After long discussion of a resolution favouring the teaching of contraceptive methods no decision was reached and the whole question of birth control was referred to the National Council of Child Welfare for investigation.

Massage and Medical Gymnastics.

The second annual meeting of the Central Governing Board of the South African Society of Massage and Medical Gymnastics was held at Johannesburg from Sept. 27th to 30th last. Delegates from the Cape Province, Natal and the Transvaal were present. The agenda included: (1) certificates to be recognised by the Society; (2) the proposal to establish a training school for physiotherapy at the University of the Witwatersrand; (3) action to be taken by the Society in regard to the position of members under the Medical, Dental and Pharmacy Bill; (4) a register of masseuses seeking employment to be kept at the Head Office, and by branch secretaries; (5) appointment of a Headquarters Committee in Capetown. Mrs. Dircks, the president, in the opening address, referred to the growth and wider recognition of the Society since its formal inauguration in December, 1924, and outlined the work that had been accomplished during the past year.

Plague Menace.

The grave warning issued by the Union Government Public Health Department to local authorities in regard to the menace of plague in connexion with seasonal increase of rodents has been followed by a big campaign against rats throughout the Union. In the plague outbreak of 1925-26 no less than 50 lives were lost before the danger was suppressed. It is again pointed out by the Public Health Department that the seasonal increase in the activity of rodents and fleas may be expected to occur within the next few weeks.

The Late Dr. Howell Davies.

Dr. Howell Davies, who has died at Pretoria, Transvaal, was born at Carmarthen in 1871, and received his medical education at St. Bartholomew's Hospital. At the outbreak of the Boer War Dr.

Davies went out to South Africa as a civil surgeon, and gained special recognition for services in connexion with the reorganisation of the large camp at Irene. After the close of hostilities Dr. Davies settled in practice at Pretoria. He was at various times president of the Pretoria Branch of the British Medical Association, and at the recent amalgamation of the B.M.A. with the South African Medical Association was elected Chairman of the Pretoria branch of the dual association. He acted as Government district surgeon for Pretoria, and for 15 years was honorary surgeon of the Pretoria General Hospital. Just before his death he was elected President of the 21st annual South African Medical Congress, held at Pretoria recently.

MEDICINE AND THE LAW.

Dangerous Drugs: "Direct Personal Supervision."

A MOST important decision of the High Court, given on Nov. 11th, explains the liability of a medical practitioner in the matter of keeping a register or day-book under the Dangerous Drugs Act Regulations of 1921, and places a common-sense interpretation upon the words "administration of the drugs by or under the direct personal supervision of a duly qualified medical practitioner" in the proviso to Regulation 4. It will be remembered that Dr. G. C. Kingsbury was fined £25 by the Lord Mayor a little while ago for having supplied morphine to a patient without entering in a register the particulars required by Schedule 1 of the Regulations, including the name and address of the person supplied. No suggestion was made which reflected on Dr. Kingsbury's character; the offence was regarded as entirely technical. The proved or admitted facts were that Dr. Kingsbury became a barrister in 1902 and practised law from that date, but occasionally gave medical treatment to old friends and patients without fee. Two of the latter sought his help to cure them of morphine addiction. The first of these was cured before the end of 1924; the other was treated by the method of gradual reduction, the daily dose being brought down to one-fiftieth of that taken by the patient originally. Dr. Kingsbury saw this patient every other day, even during his own holidays; at each visit he left the dose for the day and the succeeding day with instructions as to the time and method of taking it. He did not actually see the patient take the dose, but he was satisfied that he would have known if the patient was getting morphine from other doctors. Was this an "administration of drugs by or under the direct personal supervision" of a qualified practitioner? If so, Dr. Kingsbury was protected by the proviso to Regulation 4, which states that such administration is not to be deemed a supplying of the drug for the purpose of the Regulation which requires the keeping of a register or day-book. During the argument on appeal, the prosecution said that the words "direct personal supervision" were the strongest possible; it was emphasised that the patient might have taken his two days' supply in a few hours. Lord Hewart asked a pertinent question: "Suppose a doctor personally administers a dose of medicine to a patient at 11 A.M. and says, 'If his temperature rises a degree, give another dose to-night; otherwise wait till I see him again at 11 A.M. to-morrow'—would that be 'direct personal supervision'?" Mr. H. D. Roome, for the Director of Public Prosecutions, answered frankly in the affirmative, saying it would be oppressive to hold otherwise. This was really the crux of the case. It was true that another Regulation provided for cases of emergency, and counsel suggested that the idea might be imported into the proviso to Regulation 4 so that the doctor should only be protected under the proviso if the drug was taken in his actual presence or if it was a case of emergency. As the Lord Chief Justice observed, this was not what Regulation 4 said. He considered there had been direct personal supervision and, without discussing the amendment of the Regulations, he announced that the appeal must succeed and the decision of the Lord Mayor must be upset. The appellant had also argued that the Regulation was ultra vires, because the general words of the Act related to the manufacture, sale, distribution, and possession of drugs and not to the prescribing and dispensing of drugs by medical practitioners. The object of the Act was to stop improper drug traffic, not to interfere with the confidential relations between doctor and patient; the power in Section 10 of the Act, for instance, enabling constables to enter and inspect books, could hardly be taken to justify a policeman in entering a doctor's surgery and demanding to see the names and addresses of patients. The Court, having given its decision on another ground, did not require to deal with the ultra vires point, which may, however, be put forward again shortly in another appeal.

Milk Deficient in Fat: Unsuccessful Prosecution.

Once again the prosecution of a farmer for selling milk deficient in fat has failed. A charge at Walsingham Petty Sessions on Nov. 1st alleged that the sample contained only 2·61 per cent. of fat instead of the 3 per cent. which is the prima facie minimum prescribed by the Sale of Milk Regulations of 1901. Once again the defence seems to have been unable to rebut the analysis put forward by the prosecution, but once again the defendant escaped by calling evidence that the milk had not been tampered with. The farmer, who had otherwise an unblemished record in the matter of milk purity, explained that the milk roundsman had run short of milk and had come back for another two gallons. These were obtained from the milk of two cows which had recently calved. As is clear from the evidence at previous prosecutions the forepart of the milk drawn from a cow which has recently calved is deficient in milk-fat—a fact of which farmers are presumably aware. Thus it happens that, while the milk they sell is genuine and undiluted milk, the purchaser gets something below the prescribed standard and has no warning of the fact. The purchaser is safeguarded in the selling of certain other kinds of milk; the Condensed Milk Regulations, for instance, insist that condensed machine-skimmed or condensed skimmed milk (sweetened or unsweetened) is to be labelled "Unfit for babies." The same warning must be given on the sale of dried machine-skimmed or dried skimmed milk under the Dried Milk Regulations, which also provide that dried partly-skimmed milk (containing not less than 8 per cent. but less than 26 per cent. of milk-fat) shall bear the words, "should not be used for babies except under medical advice." The whole trend and purpose of the Sale of Food and Drugs Acts is to ensure that the purchaser gets an article of standard quality. Farmers will have only themselves to thank if public opinion demands legislation compelling them to declare by some means to the purchaser the fact that the milk sold is, or from the circumstances of the milking may be, below the standard of 3 per cent. of milk-fat. It is a matter in which the National Milk Conference may well give a lead.

The Kynaston Case.

Lieut.-Colonel John Kynaston, R.A.M.C. (retired), was fined £10 at the Central Criminal Court on Nov. 15th for aiding and abetting the obtaining of a dangerous drug (medicinal opium) contrary to a regulation made under the Dangerous Drugs Act of 1920. His name had been removed from the medical register in 1922, but he had continued to practise as a doctor, and on Aug. 25th he gave a prescription containing powdered opium to a patient suffering from nasal catarrh. The prescription was signed "Lieut.-Colonel John Kynaston, R.A.M.C. (retired), M.R.C.S., and L.R.C.P. (London)." The Dangerous Drugs Act and Regulations prohibit the possession of forbidden drugs except under licence or on the prescription of a "duly qualified medical practitioner." The prosecution said these latter words had only one meaning—namely, a practitioner whose name is on the medical register. The defendant said

"duly qualified" did not necessarily mean "registered." The jury's verdict was "guilty," and the Common Serjeant inflicted a nominal fine, taking into account the defendant's bona fides. Lieut.-Colonel Kynaston intimated that he would probably appeal, and, indeed, if there is any doubt as to the law, that doubt had better be promptly removed. It is, perhaps, remarkable that the various Dangerous Drugs enactments use so many different expressions to describe the doctor. The Act of 1920 talks merely of "medical practitioners" (in Section 7); the Act of 1923, in a passage dealing with poisons rather than dangerous drugs, speaks of the "registered medical practitioner"; and the Regulations of 1920 use the expression "duly qualified medical practitioner," coupling it with "registered dentist" and "registered veterinary surgeon."

The actual legal point before the Central Criminal Court was a narrow one. The defendant, as appears from his evidence, sought to enlarge the case by bringing in questions of the justice or injustice of the removal of his name from the register in 1922 for advertisement. These questions were irrelevant. If he claims that he did not advertise or that his advertisement was not improper, the Central Criminal Court is not a tribunal of appeal from the Medical Council. If he contends that the Medical Council acted with bias or that the Colleges had no legal right to deprive him of his diplomas, then his legal remedy lies elsewhere. As an offence against the Dangerous Drugs Act his offence was trivial, but the wider issues he raises are serious. What would be thought of a solicitor who, having been struck off the rolls, continued to call himself an admitted solicitor? Or of a barrister who, having been disbarred, claimed still to describe himself as a barrister-at-law? The more publicity Lieut.-Colonel Kynaston's case receives the more clearly appears the following truth, which the public has not always fully appreciated. Neither the absence of medical diplomas nor the absence of his name from the pages of the medical register prevents a man from practising as a doctor.

POLIOMYELITIS AT BROADSTAIRS.

THE following letters, referred to in our editorial columns, were issued to the parents of each child in a group of schools in the Isle of Thanet in connexion with the recent outbreak of poliomyelitis.

(I.) Oct. 20th, 1926.

Epidemic poliomyelitis (infantile paralysis) is unfortunately prevalent in certain districts in England.

The majority of the cases are mild and leave no permanent disability. On the other hand, a few of the cases are serious either on account of their severity or because some vital part of the nervous system happens to be attacked.

The disease is somewhat prevalent in the Isle of Thanet, and with a view to its prevention we are giving the following responsible opinions and advice in the interests of certain schools at Broadstairs.

The disease has an incubation period of not exceeding seven days, and is conveyed from person to person.

Its infectivity is greatest at the onset and often before the patient has shown any symptoms, but the infectivity declines rapidly when the disease is established.

A number of cases are so mild as to produce no appreciable feeling of illness and the individuals thus lightly attacked, though themselves escaping, are liable to infect their comrades.

Our advice is that all boarding schools in the district, whether they have cases or no, should isolate themselves from outside human contact, and for the time being become self-contained communities. If there are day scholars at any school they should for the time being cease their attendance.

We advise that each school as a self-contained community should continue its work and its play subject to certain modifications. Close assemblages should, as far as possible, be avoided or shortened, for instance, chapel services should be curtailed. Ventilation and open air which are prevalent customs in all schools should be given additional prominence.

The pupils of each school should wash the mouth and throat three times in the 24 hours under medical direction, together with other measures advised.

If these means are pursued parents may be assured that their children will be better protected than if the schools are broken up and for these reasons:—(1) A self-contained community like a school can be independent of the outside world, and, therefore, protected from infection; (2) the ordered life of work and play enhances resisting power.

In addition to the ordinary care of health pupils can be kept under skilled observation, and, therefore, the disease would be detected in its earliest stages, for it must be remembered that the symptoms may be so slight as to easily pass unnoticed not only by relatives, but even by a doctor, unless his knowledge of the prevalence of the disease would prompt him as a matter of routine to apply the special tests in investigating the case. Further, no instance has been recorded of a patient spreading this disease while under treatment in hospital.

During the period of quarantine, during which no boy or girl should leave the ground of his or her school, it is important that circumspection should be practised with regard to the visits of parents to the schools.

It may be added that Sir George Newman, the Chief Medical Officer, Ministry of Health, is taking such action in the general community in the Isle of Thanet as is practicable.

(II.) Nov. 5th, 1926.

We think it might be of assistance to parents if we were to issue a further statement concerning the epidemic of poliomyelitis at Broadstairs.

1. The measures taken have been successful. No fresh cases of the illness have occurred in the whole district since Friday, Oct. 29th.

Since the incubation of the disease is usually not more than three days, and never more than seven, it will be seen that the position is satisfactory.

To make the position, however, still more secure it has been decided to continue the quarantine in the schools for a period of three weeks from the last cases; thus, if the present favourable position continues, the quarantine of the schools will end on Friday, Nov. 19th.

2. In our opinion it will be quite safe for parents to pay their "half term" visits to their children on or after Nov. 12th. To ensure absolute security we advise on such "half term" visits parents should either stay in the schools or should take their sons or daughters by car to some place like Sandwich Bay where it is known no case of the disease has occurred.

3. As regards the return to school for scholars who have been removed by their parents on account of the epidemic, such scholars may be sent back to school 14 days after the occurrence of the last case in Broadstairs, that is, as at present advised, on or after Nov. 12th.

It will be necessary that such scholars should be isolated in or about their homes (that is avoiding all visits outside) for four clear days before their return to school.

The last part of their journey should be by car from Margate direct to the school. On their return they will be isolated at school for a further period of three days.

4. Anxieties have been expressed by some parents as to whether Broadstairs will in future be an infected area.

Such an idea is in exact opposition to the facts. The infection does not exist in *places*. Broadstairs, as a place, has never been infected.

The infection resides in certain people, and is conveyed from one person to another.

When this epidemic is over, as it promises very soon to be, Broadstairs will be *more* secure from this disease than the rest of the country, because those susceptible will have had it and immunity will have been established.

The letters were signed by Lord Dawson, Dr. James Collier, and Dr. E. G. Moon.

A CORRECTION.—We regret that the word "tabloids" was twice employed in our last issue (THE LANCET, Nov. 13th, p. 1027), instead of the word "tablets." "Tabloid" and "tabloids" are, of course, registered trade marks and can only be used to describe the special products of Messrs. Burroughs Wellcome. The error occurred in a communication from our Berlin correspondent.

LONDON STREET ACCIDENTS.—In the Metropolitan police district in the three months ending on Sept. 30th, there were 269 fatal and 26,727 non-fatal accidents, which is at the rate of more than 1000 fatal accidents and 107,000 non-fatal ones per annum. The largest number of misadventures was caused by private motor-cars, followed at a long distance, by commercial motors. Pedal cycles, which come next, were slightly more dangerous than motor cycles.

Public Health Services.

SCHOOL MEDICAL SERVICE.

THE following are statistics taken from the reports for 1925 of school medical officers in two districts.

Name of district.	No. on roll.	Av. elem. school attendance.	No. of routine children examined.	No. of special examinations and re-inspections.	Percentage of children found on routine examination requiring treatment.*
Warrington C.B. ..	13,180	—†	4,013	4,491	17·16
Nuneaton ..	7,789	6,667	1,133	8,308	13·3

* Excluding uncleanliness and dental defects. † Not given.

Warrington.

Dr. G. W. N. Joseph, in his thirteenth report on school hygiene, makes some interesting observations on the planning of new schools, and refers to the use of special glass which allows the passage of ultra-violet rays through the classroom windows. It is noted that, although verminous heads and impetigo have become much less common during the past six years, there has not been the corresponding decrease of enlarged cervical glands that might have been expected. The percentage of children showing very defective nutrition has grown from 0·9 in 1924 to 1·3 in 1925. An epidemic of measles started about the middle of June and went on till the end of the year. The number of cases was greater than in any other year of the Warrington records. In May, 1921, arrangements were made for treatment to be given twice weekly in every school in the borough, and results have been very gratifying. The nurses are said to be unanimous that this work at the schools is doing more good than the work previously done at the clinics. It will be seen that in 1925 only 18,553 school attendances were lost in consequence of minor ailments, compared with 104,453 in 1918—a saving of 85,900 attendances. Any extra cost involved by the larger staff of nurses can thus be practically defrayed by the large saving of grant. Children with enlarged tonsils and adenoids are operated on at the infirmary at or about 11 A.M. on Friday mornings, and remain there until 4.30 P.M. At this time the Health Department Ambulance removes them to their own homes. After the operation the child attends from time to time at the school clinic, where nasal douching, etc., is done if necessary. A leaflet on breathing exercises for the child is given to the mother, and a notice is sent to the head teacher of the school stating that the operation has been done, and asking that the child shall be corrected for mouth-breathing.

There are no open-air schools (day or residential) in Warrington. The account given of the Warrington occupation centre is interesting and valuable. An inquiry was made at the end of 1925 to see to what extent children needing spectacles continued to wear them after leaving school. A questionnaire was prepared, and the nurses filled in certain particulars in the course of their usual visits to the home. Altogether 163 children (83 boys and 80 girls) had left school during that time wearing glasses for the correction of defects that rendered the vision worse than 6/12 in at least one eye. Of these 163 children, 106 (56 boys and 50 girls), or 65 per cent., had discontinued wearing glasses after leaving school. This discontinuance appeared to be quite irrespective of the amount of visual defect present at the last examination. The report of the inquiry gives in detail the various reasons for which the children ceased to wear their glasses, and it offers so much food for thought as to be well worth reading in full.

Nuneaton.

Dr. P. G. Horsburgh points out that the number of routine inspections during the year was very low. This was due to epidemic of small-pox and to the change of school medical officers in July of the year. Small-pox, he remarks, is a disease of choice, but it is also an expensive disease, and lays a burden on the rates. Medical inspection revealed the very significant fact that only 9·2 per cent. of the children were vaccinated. Malnutrition and dietetic errors are commented on in an illuminating way. Dr. Horsburgh says that he has found that often the pre-tuberculous (non-infective) child is better attending school than if he is excluded from it for long periods. Often these children are kept at home and allowed to sit indoors over the kitchen fire most of the day, so that they do not get as much fresh air as they would if they remained in school.

A special clinic for the treatment of crippling defects is run in coöperation with the Royal Orthopædic Hospital, Birmingham. Cases requiring hospital treatment are sent into Birmingham, and the maintenance of each case is arranged for by the committee according to the home circumstances. In discussing the coöperation of parents, it is pointed out that those who refuse any form of treatment—fortunately few in number—are more often fathers than mothers.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 6TH, 1926.

Notifications.—The following cases of infectious disease were notified during the week: Small-pox 302 (last week 131), scarlet fever 1873, diphtheria 1108, enteric fever 43, pneumonia 1095, puerperal fever 60, puerperal pyrexia 169, cerebro-spinal fever 5, acute poliomyelitis 36, acute polio-encephalitis 4, encephalitis lethargica 49, dysentery 20, ophthalmia neonatorum 127. There were no cases of cholera, plague, or typhus fever notified during the week. The increased incidence of small-pox is explained by the report of 263 new cases from the county of Durham. Only 15 of these were notified fron the county boroughs of Gateshead and South Shields; 153 from 8 boroughs and urban districts (Brandon-and-Byshottles reporting 98 cases); and 95 from 6 rural districts (Lanchester reporting 49 cases).

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox, 1 (0) from enteric fever, 11 (1) from measles, 8 (0) from scarlet fever, 18 (3) from whooping-cough, 40 (12) from diphtheria, 101 (24) from diarrhœa and enteritis under 2 years, and 88 (14) from influenza. The figures in parentheses are those for London itself.

THE LATE PROF. F. M. CAIRD.

THE following appreciation of Prof. Caird has reached us from an old pupil: "Your obituary notice recalls many of Prof. Caird's great qualities, but omits one of his greatest. All through his career he was distinguished for his wonderful and unfailing kindness to his juniors at all ages. To him went students with their surgical troubles and from his kindness and help there arose many a lifelong friendship. One student remembers with gratitude his first winter in Edinburgh when laid up with a damaged knee. Mr. Caird, as he was then, came daily for six weeks across the meadows to cheer up a rather lonely youth and to keep him well supplied with books—no small expenditure of time and trouble for a busy man on one who at first was a complete stranger—a stage quickly passed and merged into a friendship that lasted to the end. Dozens of men must remember that little room at the top of his house furnished partly with treasured chairs from the old Infirmary . . . . Here all were welcome and here everything on earth was discussed and thither one took one's joys for congratulation and one's sorrows for comfort, and always came away better."

A DUNLOP CHILDREN'S BED.—Through the Dunlop Hospital and Benevolent Fund the employees of the Dunlop Rubber Co. have endowed a cot in the Birmingham Children's Hospital at a cost of £1000. Between two and three years were occupied in raising the money, and it is hoped gradually to endow other beds in the hospitals of the city.

Correspondence.

"Audi alteram partem."

HALOGEN ERUPTIONS WITH LESIONS ON THE TONGUE.

To the Editor of THE LANCET.

SIR,—It is pleasant to find that my short note on Halogen Eruptions in THE LANCET of Nov. 6th (p. 952) has called forth so interesting and informative a response from Dr. Parkes Weber. There is one point in the wording of his letter which, perhaps, I may be allowed to make more clear. His opening sentences might give the impression to anyone who had not read my paper that I had overlooked the case published by him in 1923, in which, as in mine, there was a lesion on the tongue. That, of course, is not the case, and I am sure that he had no intention of conveying such a meaning, because my words, which he quotes in full, were taken from an article published in 1906—that is, 17 years previously to the publication of his case. At the time that they were written, so far as could be ascertained from the then current literature, they were correct. No similar case in which the tongue was involved had been then recorded.

It is interesting to note that Dr. Weber looks upon defective renal elimination as playing a part in causing these fulminating outbreaks of iododermia after small doses of the drug. That, as I said in my note, was, for a long time my opinion, and it seems reasonable. Whether it does play any part or not it is evident from Dr. Semon's case that such a part is not essential, at least if defective elimination is to be estimated by the presence of albuminuria. Dr. Weber's concluding sentence raises a point of some historical interest. It is quite true, as he points out, that these rarer halogen eruptions have sometimes been diagnosed as syphilitic, and when this happened fuel in the form of further doses of iodide of potassium was promptly and hopefully added to the flames. This was, as he says, before the days of the Wassermann test. Perhaps it is hardly realised by the younger generation what changes this test has brought about.

Before its advent one of the most delicate and important functions which the specialist in dermatology was asked to perform, was to settle whether a given sore or rash was or was not of syphilitic nature. Some few dermatologists became extremely expert at this. They were quite as realiable in their decisions as are the most experienced connoisseurs in various branches of art, but like these they were occasionally deceived by clever imitations which was rather a serious thing to happen. The discovery of the spirochæte and the use of the Wassermann test have removed the supreme court of appeal for syphilis from the dermatologist's consulting-room to the laboratory of the pathologist, and in so doing have widened its sphere of influence in that cases can now be submitted for judgment not only where there is direct evidence on the skin or mucous membranes, but also where it is only indirect, as in lesions of the internal organs.

Science has here replaced art to the advantage of medicine. I am, Sir, yours faithfully,

Sheffield, Nov. 13th, 1926. ARTHUR J. HALL.

ASTRONOMY AND LETTERS.

To the Editor of THE LANCET.

SIR,—The review of Dr. J. H. Bridges's work and life, which appeared in your issue of Nov. 13th, emboldens me to draw attention to the curious inability of even scholars and well-educated writers to realise simple facts in astronomy. Bridges was a great social reformer, a scholar, and an eminently intelligent person, and yet I find that, besides making the slips which your reviewer pointed out, he made an extraordinary error as regards a star. On p. 140 of Mrs. Liveing's book I find a letter to his wife dated June, 1876, in which he speaks of a star to be chosen as especially hers.

"What shall it be? Not the red Arcturus which lifts itself up for a short space above the southern horizon at midnight and will be seen no more till summer comes again."

Bridges should have remembered his Hesiod, Works and Days, ll. 564–567.

Εὖτ' ἂν δ ἑξήκοντα μετὰ τροπὰς ἠελίοιο
Χειμέρι' ἐκτελέσῃ Ζεὺς ἤματα, δὴ ῥα τότ' ἀστὴρ
Ἀρκτοῦρος προλιπὼν ἱερὸν ῥοὸν Ὠκεανοῖο
Πρῶτον παμφαίνων ἐπιτέλλεται ἀκρονέφαιος.

And apart from that Arcturus can be seen both to rise and set about the middle of November. But the average writer seems to think that a star or especially the moon can be in any part of the heavens at any time of day or night, and at any season in the year which suits the convenience of the writer. The *locus classicus*, of course, is the passage in the first edition of "King Solomon's Mines," where Rider Haggard made an eclipse of the sun last for over two hours and that, too, on the day of the full moon. Another eminent and well-read living writer makes the full moon to be "just rising in the east" at a quarter before midnight in October in the south of England. As a variant on this another novelist has a fine descriptive passage

"Near the horizon line in the west the sun . . . . plunged precipitously downward. . . . . In the east a slender crescent shewed the moon at her birth!"

This, however, was on the west coast of Africa, where anything may happen and perhaps that is the reason why the author put a "!" after his statement. In future, however, we may hope that novelists and others will take pains to be more accurate, for one of the ablest novelists of to-day, Miss Rose Macaulay, has, with that devilish insight into human frailty which is so marked a characteristic of her work, said in "Crewe Train" p. 143, "Never mind, practically all novelists slip up now and then over the moon: it would be rather priggish and pedantic not to. The literary moon doesn't really matter." But after all, as an eminent analytical chemist and one whose life was spent on insisting on the value of essential accuracy, by name Sherlock Holmes, said, "What difference does it make to me or my work, whether the sun goes round the earth or the earth goes round the sun?"—I am, Sir, yours faithfully,

Nov. 15th, 1926. HIPPARCHUS JR.

GERMAN MEDICAL WOMEN.

To the Editor of THE LANCET.

SIR,—In last week's issue of THE LANCET your Berlin correspondent gives some figures regarding German medical women which appear to be based on insufficient knowledge or some misreading of the statistics. He states that there are 31 medical women in Munich, 15 in Frankfort, and *a total of* 327 *in all Germany*. For the correct figures and a very interesting analysis of them, I should like to refer him to an article entitled "Die deutsche Aerztin" in the last issue of the "Vierteljahrschrift deutscher Aerztinnen," the organ of the German Association of German Women Doctors which has already 626 members although it has not been in existence two years.

The real figures, based on the "Aerztliche Handbuch," would appear to be:

Large towns	943
Medium towns	279
Smaller towns and country	173
Total	1395

In Berlin alone there are 400, in Munich 84, and in Frankfort 31. The whole question of the irregular distribution throughout the provinces is an interesting one. Baden has the highest percentage of women doctors as compared with the population, and Upper Westphalia the lowest.

I am, Sir, yours faithfully,

L. MARTINDALE,
Hon. Sec., Medical Women's International Association.
Weymouth-street, London, W., Nov. 12th, 1926.

THE CLOSING OF UPPINGHAM SCHOOL.

To the Editor of THE LANCET.

SIR,—The notice taken—and very naturally—in the general press of the closing of Uppingham School prompts a direct communication to the medical profession.

We have not had any cases of infantile paralysis in the Uppingham district, but an outbreak has occurred in Leicester and a few cases were reported on the other side of that county earlier in the autumn. It is within my knowledge that a considerable number of these cases have been treated in general and private hospitals without special precautions, and I am informed that no direct infections have been traced. Two cases have occurred in Uppingham School.

CASE 1.—The boy was attending school on Friday, Nov. 5th, reported "seedy" that evening, was removed to the sanatorium on Saturday morning with no definite symptoms—he did not feel really ill, and was, indeed, keenly interested in an inter-school football match. But on Sunday at midday it was evident that the attack was severe, by 10 P.M. respiration was seriously interfered with, and death took place about 6 o'clock Monday morning.

Our helplessness in this case impressed my colleagues, Drs. F. H. Wallace and A. R. Beaumont, as much as myself, and we resolved that in event of another case occurring we would employ mercurochrome as a remedy against the acute hæmic infection.

CASE 2.—The second boy was in morning and second school on Friday, Nov. 12th, returned to his house about 11 A.M., and was seen by me at 11.30, when he looked very ill, temperature 102·8° F., pulse 140, respirations 50. He was removed to the sanatorium, all the symptoms pointing to the general invasion stage of infantile paralysis—and a severe invasion it was. An intravenous injection of mercurochrome, calculated on the body-weight, was given; the patient was encouraged to drink large quantities of water and home-made lemonade. Within a few hours there was obvious improvement, pulse and respirations slowed down, and what had looked a really bad attack has not since given rise to grave anxiety.

To-day (16th) the boy is convalescent—no paralysis yet appeared; his knee-jerks are very dull—at one period they were absent; a very considerable experience of Kernig's sign during a cerebro-spinal epidemic in war-time did not impress me with its value in diagnosis.

Although I am not convinced of the patient-to-patient infection theory, on our Case 1 appearing the boy's house was isolated, arrangements were made forthwith for the *entire* servants, master, and school population to gargle and sniff a pot. permanganate solution. Now with reference to the closing of the school for 16 days we have been criticised. That is not unexpected particularly in a disease where the pathology is so vague that most conclusions are in the nature of guesses.

A circular letter was sent to parents by the headmaster after the first case. There was no panic amongst them and only four boys went home from the isolated house, though the parents urged that, as the boys were not working, their quarantine might well be spent at home. It was evident from some of the letters that in event of another case parents would demand the return of their boys in many instances.

There are 13 boarding-houses connected with Uppingham School and they are widely scattered. Some of them are in the High-street and open directly on to the street—the town is permeated by the school. Isolation of the school would be impossible; the conditions existing at Uppingham have no relation to any that might occur either in a preparatory school or in great schools where the school is itself a unit. I, am, Sir, yours faithfully,

W. DUNN, M.B.,
Nov. 16th, 1926. M.O., Uppingham School.

PS.—The letter sent by the headmaster to the parents was as follows:—

School House, Uppingham, Nov. 12th, 1926.

DEAR SIR,—A second case of infantile paralysis has occurred, and I have therefore decided to disband the school for a fortnight and two days. The incubation period is from 4 to 14 days, and although there is small risk that your boy has the infection upon him, he ought to be carefully observed until the period is over. Unless you hear to the contrary, the school will reassemble on Monday, Nov. 29th, and the term will end on Thursday, Dec. 23rd. I much regret any inconvenience to which this may put you. It is requested by the Minstry of Health that the medical officer of health of your district be informed of the reason of your boy's return from school. Yours sincerely,

R. H. OWEN.

PROF. CÉSAR ROUX'S RETIREMENT.

AFTER 39 years of active service as director of the Surgical Clinic and professor of surgery at the University of Lausanne, Dr. César Roux has retired. Born in 1857, Roux retained until his seventieth year the vigour and energy of youth, the Canton of Vaud raising the age-limit expressly on his behalf. Roux was the first pupil of Theodor Kocher, when the latter was appointed very young to the chair of surgery at Berne. The pair have been called the "old masters" of Swiss surgery, each being endowed with the qualities suited to the part of Switzerland, German or French speaking, in which he worked. Roux came from Orbe, a little village lying among vineyards on the slopes of the Jura, and was a true son of his beloved Pays de Vaud. During his strenuous life he instructed several generations of surgeons, and his pupils are now scattered over the whole country. The number of patients on whom he operated each year averaged something over 1500, and there is no Vaudois village between Vallorbe and Aigle which does not contain citizens, young or old, who owe their lives to him. His fame spilt over into surrounding countries, and few surgeons have had such an international clientèle. A Swiss correspondent writes: "Visitors to Roux's clinic, and they were many, were amazed at his ceaseless energy. From the moment he began to lecture at 8 A.M., until he finished operating at 1.30 P.M., he never ceased to talk or to be the driving power of the whole machine. Courteous, imperturbable, stimulating to his colleagues and students, and almost worshipped by the townspeople, he was fond of recalling the difficulties of his early boyhood, when his peasant parents lived and worked in the sunny front room of the hillside chalet, the children living as best they could in the cold, dark, airless room facing the hill behind. But there were always the warm cows to sleep with." When the surgeons of to-day were boys at school Roux was already one of the giants of surgery, a man whose name will live beside those of Lister and Kocher.

Medical News.

UNIVERSITY OF CAMBRIDGE.—Sir Humphry Rolleston, Regius Professor of Physic, has been elected as the representative of the University on the General Council of Medical Education for five years, in place of Dr. W. L. H. Duckworth, resigned.

At a congregation held on Nov. 13th, the following degree was conferred:—

M.B.—F. R. Sandford.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At an ordinary meeting of the Council, held on Nov. 11th, the President, Sir Berkeley Moynihan, stated that the vacancy on the Board of Examiners in Dental Surgery, occasioned by the death of Mr. Douglas Gabell, would be filled at the ordinary meeting of Council in December; that the vacancy on the Court of Examiners, occasioned by the resignation of Mr. Herbert S. Pendlebury, would be filled at the same time, and that two additional members of the Court would also be elected.—Alterations in Sections IV., VIII., XX., XXV., and XXVI. of the by-laws were approved. and the solicitor to the College was instructed to submit the new by-laws to the proper authorities for sanction and ratification.—A letter was read from Sir W. Morris Carter, offering to the College, in accordance with the instructions left by will, a portrait by Mr. W. W. Ouless, R.A., of the late Sir Henry Morris, Bart., past-President of the College. The portrait was gratefully accepted.—Diplomas of M.R.C.S. were conferred upon 179 candidates (155 men and 24 women)

who have passed the final examinations of the Conjoint Board. Their names have already been published in THE LANCET (Nov. 6th, p. 981).

The Secretary reported the death, on Nov. 4th, at the age of 69, of Mr. James Ernest Lane, past member of the Council and of the Court of Examiners. The following vote of condolence was passed: "The Council hereby express their deep regret at the death of Mr. James Ernest Lane and their sincere sympathy with his widow and relatives in their bereavement. Mr. Lane's services to the College as an examiner and as a member of the Council are remembered with appreciation, and since his retirement, his long illness, borne with patience and fortitude, has been a matter of sympathetic concern to his friends and former colleagues on the Council."

AMERICAN COLLEGE OF SURGEONS.—At the end of the clinical congress on Oct. 29th honorary Fellowships of the College were bestowed on Prof. Archibald Young, Sir Ewen Maclean, Prof. John Fraser, and Prof. David Wilkie.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—At a dinner to be held at the Hotel Victoria on Monday, Nov. 22nd, at 7.30 for 8 P.M., Lord Balfour will be the principal guest, and Dr. Andrew Balfour, President of the Society, will take the chair.

NO. 14 STATIONARY HOSPITAL, B.E.F.—The annual dinner of this hospital will be held on Friday, Dec. 10th, at the Trocadero Restaurant. Any members of the mess who have not received a notice and desire to attend should communicate with Major H. L. Tidy, 39, Devonshire-place, London, W.1.

BRITISH LEGION: BRITISH SERBIAN BRANCH.—The annual re-union dinner will be held on Saturday, Dec. 4th, at 7.15 for 7.30 P.M., at the Victoria Mansions Restaurant, 24, Victoria-street, Westminster, with Sir James Berry, the President, in the chair. All who served in Serbia are invited, together with their friends. Tickets may be had from Miss Marx, the honorary secretary, 24, Melcombe-court, Dorset-square, London, N.W.1.

THE LATE DR. SMITH WYNNE.—Dr. Graham Smith Wynne, whose death was announced recently, was born at Norwich of an old Norfolk family and was educated at St. Bartholomew's Hospital He qualified as M.R.C.S., L.R.C.P. in 1901, and after holding a house appointment at the Huntingdon County Hospital, settled in Amersham where he became medical officer to the Penn and Coleshill district. Dr. Wynne was a keen yachtsman and was 50 years of age. He leaves a widow.

NEW BRUNSWICK AND THE MEDICAL REGISTER.—On Nov. 5th the King in Council directed that "Whereas the Province of New Brunswick no longer affords to the registered medical practitioners of the United Kingdom such privileges of practising in the said Province as to His Majesty seem just," the Province shall no longer be deemed a separate British possession to which the Second Part of the Medical Act of 1886 shall apply. Practitioners registered in New Brunswick thus lose the right to enter their names on the British Register. Any persons, however, whose names have already been entered will not be affected by the change.

THE LATE DR. T. D. PATMORE.—Dr. Tennyson Deighton Patmore, who died recently at the age of 76, was the son of Coventry Patmore, the poet, and of his first wife, Emily Augusta Andrews—"The Angel in the House"—who died in 1862, leaving six children. Dr. Patmore went to University College Hospital and qualified as M.R.C.S. in 1875, later taking the L.R.C.P. Lond. and D.P.H. Camb. For many years he was medical officer to Wormwood Scrubbs Prison and assistant surgeon to Woking Male Convict prison. Later he acted as medical officer at the head office of the Ocean Accident and Guarantee Corporation. Besides numerous yearly prison reports, Dr. Patmore wrote on Malingering and Feigned Diseases for medical dictionaries, and various articles in medical journals.

ROYAL SUSSEX COUNTY HOSPITAL.—In June, 1928, this hospital at Brighton will celebrate its centenary. To mark the event the governors have decided to extend the nurses' home, to provide new accommodation for the domestic staff, to carry out urgently needed structural alterations to the existing main buildings, and to provide accommodation for an additional 50 or 60 in-patients. The cost is estimated at £102,000, and in response to an appeal launched by Lord Leconfield, President of the hospital, on Oct. 27, some large donations have already been received. The increased size of the hospital will involve increased expenditure, and it is hoped also to secure an additional £10,000 a year to meet it. Annual subscriptions at present amount to only £4,300, which leaves about £25,000 a year to be found from payments by patients, by donations and by other voluntary efforts.

PRESENTATION TO A MEDICAL MAN.—The Committee and friends of Yeovil and District Hospital have presented Dr. C. J. Marsh, who has been its honorary surgeon since 1880, with a bust of himself, by Mrs Mitchell, A.R.B.A.

UNIVERSITY OF BIRMINGHAM.—Dr. T. L. Hardy has been appointed assistant to the chair of medicine, and Dr. C. C. W. Maguire hon. demonstrator in the department of anatomy. The Council has decided to ask the Court to confer the title of Emeritus Professor upon Prof. O. J. Kauffmann, joint professor of medicine in the University from 1913 to 1926.

ROYAL SOCIETY.—The King has approved awards by the President and Council of Royal Medals to Sir William Hardy, F.R.S., for his work on colloidal chemistry and the theory of lubrication, and to Prof. A. V. Hill, F.R.S., for his work on the physical and chemical aspects of muscular contraction. The President and Council have awarded the Copley Medal to Sir Frederick Gowland Hopkins, F.R.S., for his work in biochemistry.

PRINCE OF WALES'S HOSPITAL.—The annual dinner of the Reunion Association will be held at the Trocadero Restaurant, London, on Friday, Nov. 26th, at 8 for 8.15 P.M. Mr. J. B. Banister will take the chair. The price of the dinner will be 12*s.* 6*d.* (exclusive of wines) for members and their guests. The secretaries are Dr. Browning Alexander, 143, Harley-street, W. 1, and Dr. S. O. Rashbrook, 7, Wellesley-road, Chiswick, W. 4.

THE LATE DR. WILLIAM HOSEGOOD.—Dr. Hosegood, who died on Oct. 25th at the age of 65, was medical officer of health for the Cannock Rural District, where he had spent nearly 45 years. He was an Edinburgh man and graduated at Edinburgh University in 1881. For a time he served as medical officer of health at Amersham in Buckinghamshire, and then, going to Cannock, built up a large practice in the Cheslyn Hay district. Dr. Hosegood took a warm interest in local affairs and was a keen cricketer. He leaves a widow and several children.

VICTORIA BUSH NURSING ASSOCIATION.—The report of the Bush Nursing Association of the State of Victoria shows that at the end of June last there were 52 nursing and hospital centres at work. The centres are all run on the coöperative basis which experience has proved to be the best method of administering a Bush Nursing Centre. A householder pays an annual subscription varying from £1 to £3 10*s.*—the usual amount is 30*s.*—and for that sum obtains nursing for himself, his wife, and children up to the age of 18. The most important part of the work is midwifery and the care of infants and children.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—At a meeting of this Society, with Dr. E. Rivaz Hunt, the President, in the chair, Mr. H. N. Fletcher showed specimens of pancreatic tumour and an enlarged mesenteric cyst, also microscopical slides, after which Dr. L. A. Parry gave an address on Some Well-known Medical Criminals less widely known than Palmer, Pritchard, and Lamson. His first example was a local one, that of Dr. Warder, of Brighton, who in 1866 poisoned his wife by means of aconite, and then, when suspicion was aroused, himself took prussic acid. Two previous wives had died under suspicious circumstances, and there is very little doubt that he also poisoned these. The Brighton case aroused very considerable interest at the time. Dr. Alfred Swayne Taylor, who analysed the viscera, said he was unable to find any poison at all, although he had carefully tested for all the well-known alkaloids, including morphia, strychnia, and aconitine, and that injections from the organs into a rabbit had had no harmful effect. Yet after hearing the medical evidence of the deceased's doctor, he was of opinion that aconite poisoning was the cause of death. The jury returned a verdict to that effect. Dr. Warder had been a lecturer on forensic medicine at the Grosvenor-place School, adjoining St. George's Hospital, and had come forward to give evidence in favour of Palmer. Among medical men who had been charged with high treason he alluded to Dr. Watson, acquitted for complicity in the Cato Street conspiracy; Dr. Bateman, hanged by Judge Jeffreys after the Battle of Sedgemoor, and in particular to Dr. Archibald Cameron, who took part in the Jacobite Rebellion of 1745, as medical officer in charge of troops. After the Battle of Culloden Cameron escaped to France, and when most of those who had taken part in the rising were pardoned, an Act of Attainder was passed, excluding certain persons from this indemnity, and Cameron, who was actively instrumental in the escape of Prince Charles, was among those named; when eight years later he returned to his native land, he was arrested and hanged as a traitor.

Parliamentary Intelligence.

HOUSE OF LORDS.

THURSDAY, NOV. 11TH.

Lead Paint Poisoning Bill.

Lord DESBOROUGH, in moving the second reading of the Lead Paint (Protection Against Poisoning) Bill, said that it dealt with a matter which had long exercised those who were interested in the welfare of persons engaged in this industry. Owing to the poisonous effect of the lead paint there was no doubt that it had to a certain extent damaged those who had had to use it. It was not denied that there was a very large number of cases which required amelioration, and that made the Government all the more determined, if possible, to pass this Bill into law as soon as they could. The opposition to the measure came from those who criticised it because the Geneva Convention had not been ratified. But he would point out that in any case, even if the Geneva Convention were ratified, the men would still require the protection which they hoped would be afforded them by these regulations. The Government did not intend to postpone indefinitely the other and bigger question, but in their view it would be impossible, owing to the state of public business and the very large opposition which existed in many quarters, to pass before Christmas a Prohibition Bill. Since the discussion took place at Geneva new methods, such as the use of waterproof sandpapers, had been devised, which enabled wet-rubbing to be done instead of dry-rubbing, and that would make the work much safer than it was at present.

Lord ARNOLD said that he regarded it as a very serious thing that the British Government should have broken the agreement come to at Geneva. It was not correct to say that the Government could not pass a Prohibition Bill. The Government had a majority of 200 in the House of Commons, and of about 70 in their lordships' House, and moreover the Opposition in the Commons would have supported a Bill which ratified the Geneva Convention. When other countries who signed the Convention found out that we had gone back on our word, they might also refuse to carry out their bargain, and this would make it more difficult to pass a Prohibition Bill in the future. He was informed that the process of wet-rubbing would do little or nothing to mitigate the evil.

Viscount HALDANE said that the Bill as far as it went would make things better, and he assumed that it represented what the Government considered to be the minimum required for safety. Women were not to be allowed to work at the industry, even on the new footing on which the Bill proposed to put it. He would be glad if the Government would give them a little more information on the question why women were supposed to be more susceptible to plumbism than men. He had read, of course, the statements made in the House of Commons by the chief medical officer and others, but those were very general statements, and were very vague. Nothing had impressed him more for a long time than the danger of accepting perfectly general medical statements of this kind without reasons which had been investigated being given. He confessed that he was sceptical on the subject, and he would like to know the scientific grounds on which statements to this effect were supported. He thought the Government ought to refer a question of this kind to the Committee of Civil Research, or some other body.

Lord BALFOUR of BURLEIGH said he was glad to hear what had fallen from Lord Haldane, because he was going to state his intention of moving an amendment in Committee that the exclusion of women should be omitted from the Bill. He knew that there were certain medical reasons which had become almost a dogma in the medical profession that women were more susceptible than men, but he would like to reinforce what Lord Haldane had said, and ask on what authority the statement was made. The exclusion of women meant that women's labour was forced to remain unorganised, and women were prevented from attaining in industry a position which both from the point of view of men and women it would be much better that they should occupy.

The Bill was read a second time.

HOUSE OF COMMONS.

WEDNESDAY, NOV. 10TH.

Naphtha and Safety of Dock Workers.

Colonel DAY asked the Home Secretary if his attention had been drawn to the dangers incurred by dockers engaged in unloading foreign coal owing to the presence of naphtha in such cargoes; and whether any action had been taken, or was contemplated, with a view to the safety of worker so employed.—Sir W. JOYNSON-HICKS replied: Special inquiry has been made, but no evidence of such danger is forthcoming.

THURSDAY, NOV. 11TH.

Coroners and Deaths by Burning.

Dr. HADEN GUEST asked the Home Secretary whether his attention had been directed to the verdict of the coroner's jury on the deaths by burning of Mr. and Mrs. Rook and their infant child at a fire at No. 6, Borough-road, on Oct. 2nd this year; and whether he would consider the advisability of amending the Coroners' Bill by making the provisions of the City of London Fire Inquest Act applicable to the whole country, with a view to the adoption of methods of more efficient fire protection.—Sir WILLIAM JOYNSON-HICKS replied: The answer to the first part of the question is in the affirmative. The second part of the question appears not to arise, for it is already the duty of coroners everywhere in England and Wales to hold inquests on bodies of persons killed by fires.

Lead Poisoning in the Potteries.

Mr. RHYS DAVIES asked the Home Secretary whether his attention had been called to three serious cases of lead poisoning in one factory in the potteries during 1926 affecting young women aged 19, 23, and 24 respectively, one proving fatal; and what steps he proposed taking with regard to the use of lead in this factory in future.—Sir WILLIAM JOYNSON-HICKS replied: The three cases referred to occurred in a factory in which until this year no case of lead poisoning had been reported since 1913, about which time the factory was reconstructed; but it appears that recently the system of exhaust ventilation has not been maintained in an efficient state, and the matter has been actively taken up by my Department.

Housing Statistics.

Mr. TREVELYAN THOMSON asked the Minister of Health how many houses had been completed to date under the various Housing Acts, and how many were at present under construction, giving separate figures for municipal and private enterprise.—Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied: Up to the 1st ultimo the latest date for which figures are available, the number of houses which had been completed in England and Wales with State assistance under the various Housing Acts were 270,406 by local authorities, and 196,465 by private enterprise. The numbers under construction under the housing Acts on Oct. 1st were 58,294 and 45,217 respectively.

Infantile Paralysis.

Captain FAIRFAX asked the Minister of Health if he had any further statement to make on the progress recorded in dealing with the recent outbreaks of infantile paralysis in this country.—Sir KINGSLEY WOOD replied: My right hon. friend is glad to say that the number of cases of infantile paralysis notified in Broadstairs and Leicester during the past two weeks was only 15, as compared with 54 in the previous fortnight. There were no fresh cases in Broadstairs last week. He would like to take this opportunity of stating that infantile paralysis is a disease which has been prevalent in this country for many years. It is one of a group of epidemic nervous diseases of which our knowledge is still very imperfect, but research is being prosecuted and it is hoped that means will be discovered which will lead to the exercise of more effective control over its spread. His Department has closely watched the outbreaks, and a specially skilled member of his staff has visited the areas most affected to assist the local authority in providing for the supervision and control of the outbreaks.

Mr. EVERARD asked the Minister of Health the number of cases of infantile paralysis that have occurred each month since May last; and whether he had any further information regarding the cause of the disease.—Sir KINGSLEY WOOD replied: The number of cases of infantile paralysis (acute poliomyelitis and acute polio-encephalitis) notified in England and Wales each month since May last is as follows:

Notifications of Acute Poliomyelitis and Acute Polio-Encephalitis.

	A.Pm.	A.Pe.		A.Pm.	A.Pe.
May	18	3	August	148	16
June	29	3	September	215	7
July	56	7	October	319	54

Miners' Dependents and Relief.

Sir ALFRED KNOX asked the Minister of Health the average weekly relief paid by Poor-law guardians to the wives and children of miners during the coal stoppage and how these amounts compared with the relief granted in former trade disputes.—Sir KINGSLEY WOOD replied: The exact figures sought by my hon. friend are not available but it is estimated that in areas directly affected by the dispute in the coal-mining industry the expenditure on outdoor relief increased from May to October by an amount

equal to an average weekly expenditure of £223,000. In the same areas during the dispute of 1921 the average additional weekly expenditure is estimated to have been £65,400.

Approved Societies and Dental Benefit.

Mr. RHYS DAVIES asked the Minister of Health whether his attention had been called to the increased charges on the surplus funds of approved societies consequent upon the new agreement covering dental benefit; whether he was aware that a number of approved societies declined to operate the agreement because of those increased charges; and whether he would take steps with a view to removing the present impasse.—Sir KINGSLEY WOOD replied: The new agreement as to the scale of charges and conditions of service for the dental treatment of members of approved societies was arrived at by direct negotiation between representatives of the societies and of the dental profession with a view to securing a thoroughly satisfactory service. The new scale does involve some increased charge on the surplus funds of societies above that which would have arisen under the scale previously in operation, but the great majority of societies take the view that the additional advantages to be secured under the new arrangement justify the extra cost. My right hon. friend is aware that a few societies, representing a very small fraction of the total insured population, have not yet decided to adopt the new scale, but he does not think that the position calls for any special action on his part at the present time.

Replying to a further question by Mr. Rhys Davies, Sir KINGSLEY WOOD said: I have no reason to apprehend for a moment that the other societies which represent, I think, about 87 per cent. of the people insured, are likely to alter the existing arrangement to which their representatives agreed.

Mr. BLUNDELL: May I ask whether the hon. gentleman is aware that dentists are following in the footsteps of the doctors, and that unless some steps are taken, they may in very many cases obtain a rate of remuneration out of proportion to the services rendered?

Sir KINGSLEY WOOD: I have noticed it argued that both approved societies and members of the dental profession think that they have made a bad bargain. In these circumstances I am rather inclined to think that the arrangement is a fair one.

Deposit Contributors to Health Insurance.

Mr. NEIL MACLEAN asked the Minister of Health the number of Post Office contributors there were to the National Health Insurance; whether there were any surplus funds; and whether any special benefits were being provided to the contributors.—Sir KINGSLEY WOOD replied: The number of deposit contributors in England, Scotland, and Wales at the present time is about 271,000. The Deposit Contributors' Fund is made up of the sums standing to the credit of the individual deposit contributors, and there are, therefore, no surplus moneys in the Fund. The benefits to which a deposit contributor is entitled are the ordinary benefits under the National Health Insurance Acts so far as the balance to the credit of the contributor is sufficient to cover the cost of the provision of such benefits.

Producers and the Milk and Dairies Order.

Brigadier-General CLIFTON BROWN asked the Minister of Health whether he was aware that the Milk and Dairies Order, 1926, was causing many small milk producers in country villages expense which they could not afford, and that they must close down businesses which in some cases they had carried on without any complaint from sanitary authority for 30 years; and whether he would empower the local authorities in such cases to pay some compensation or grant an extension of time in which they must comply with the new orders.—Sir KINGSLEY WOOD replied: My right hon. friend has not heard of any such complaints, and he thinks that the producers to whom my hon. and gallant friend refers must be under some misapprehension as to the terms of the Order. Article 1 of the Order allows a considerable period of time to elapse before any of the provisions which involve any financial outlay become operative.

Dumping Refuse in Lower Thames Area.

Mr. LOOKER asked the Minister of Health whether he proposed to take any action to put an end to the practice of dumping refuse in the Lower Thames area, particularly as regards the dumps now existing at Purfleet and Tilbury and the new dump at Purfleet now in course of construction.—Sir KINGSLEY WOOD replied: As I have informed my hon. friend, these dumps have recently been inspected, and the inspection did not disclose that they are a menace to health. At the same time I may say that the general question of the collection and disposal of London refuse and the practicability of making improvements is the subject of detailed investigation at the present time, and in connexion with the investigation the dumps referred to are being kept under observation.

Out-relief to Miners' Dependants in Scotland.

Mr. JOHNSTON asked the Secretary of State for Scotland in what districts the payment of out-relief to miners' wives and children had been stopped; whether he was aware that there was serious privation in many districts; and whether he would take immediate steps to communicate with the authorities in those areas which had ceased to pay out-relief, with a view to a resumption of such payments.—Sir JOHN GILMOUR replied: I am sending the hon. Member a list of twenty-seven parish councils that have, according to the information in the possession of the Board of Health, passed resolutions to stop relief. Notwithstanding these resolutions, many of these parish councils have instructed the Inspector of Poor to give relief, where necessary, to prevent injury to health through destitution, while, in the remaining parishes in the list, the Board have advised the Inspector of Poor as to his duty to prevent injury to health. So far as the Board are aware, the Inspectors of Poor are acting on this advice, and the parish councils concerned are acquiescing. The Board are in close touch with the whole situation, and inquiries are made forthwith into any cases of hardship brought forward. No acute destitution is believed by the Board to exist, but any specific instances which the hon. Member cares to submit will be investigated.

MONDAY, NOV. 15TH.

Disability Pensions for Encephalitis Lethargica.

Mr. ROBERT MORRISON asked the Minister of Pensions whether any disability pensions were being paid in respect of encephalitis lethargica (sleepy sickness) due to war service.—Lieut.-Colonel G. F. STANLEY (Parliamentary Secretary to the Ministry of Pensions) replied: The reply is in the affirmative. I regret, however, that the statistical records of the Ministry do not enable me to state the precise number of cases.

Steel Houses in England.

Sir FRANK MEYER asked the Minister of Health the number of steel houses of different types that have been erected in England, and the number at present inhabited.—Sir KINGSLEY WOOD replied: The number of external steel or cast iron houses, the erection of which has been authorised in England and Wales, is 993, excluding those erected for demonstration purposes. Information is not available as to the number of these houses actually erected or inhabited.

Government and Lunacy Commission's Report.

Sir WILLIAM DAVISON asked the Prime Minister whether the Government proposed to introduce legislation to give effect to the findings of the recent report of the Royal Commission on Lunacy.—Mr. NEVILLE CHAMBERLAIN replied: The report of the Royal Commission is receiving careful consideration, and, until the recommendations have been examined in all their bearings, it is not possible to indicate the nature and extent of any legislation which the Government may be able to introduce.

Nursing Homes Committee's Report.

Mr. GERALD HURST asked the Minister of Health whether he had considered the report of the Select Committee on Nursing Homes; and if he intended to initiate legislation next session with a view to adopting its recommendations.—Mr. NEVILLE CHAMBERLAIN replied: The report is now under consideration, but I am not yet in a position to make any statement in regard to legislation to give effect to the Select Committee's recommendations.

TUESDAY, NOV. 16TH.

Distress in the Mining Districts.

The House went into Committee of Supply on a supplementary estimate of £3,250,000 for relief arising out of unemployment. Mr. J. F. HOPE, Chairman of Committees, was in the chair.

Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health), in introducing the vote, said that statements had been freely made that starvation existed in certain areas of the country. While a dispute such as that which had been in progress in the mining industry involved, of necessity, discomfort and hardship, the officers of the Ministry of Health, who had throughout been instructed to keep in close touch with the situation, had been unable to find cases in which the guardians or their officers had failed to relieve destitution. The general effect of their information, so far as children were concerned, was that they were better off and healthier than when their fathers were at work.

Viscountess ASTOR said that when the mining dispute began she went all over Wales to see whether the children were starving. She had not found a single case of starvation. Harm was done by mis-statement of the case for the miners and their dependants. The truth was that many of the children under 5 years of age were being under-nourished and that was a tragic thing. Nearly 50 per cent. of the children under 5 years in Monmouthshire were under-nourished. Another real hardship was the children's lack

of boots and clothes. She hoped that when the strike was over there would be a non-party movement by the women of England to help the children to get boots and shoes.

Miss LAWRENCE moved to reduce the vote by £100.

Miss WILKINSON said that the statement that in the mining areas the children were better fed than when their parents were at work was an extraordinary falsehood with a veneer of truth. There was this modicum of truth in it, that where there were Labour boards of guardians, the proportion which was to be spent in food was higher than when the fathers were at work. But none of the other expenses of the household were being paid. There was nothing for clothes, boots, or any of the other necessaries of life.

Mr. BUCHANAN, referring to Lady Astor's remark that there was no privation or starvation among children, said that his brother, who practised as a doctor in a neighbouring division of Glasgow, said—and this would be borne out by other medical men there—that the housing conditions were scandalous and required radical and desperate treatment. Worse than the housing conditions, at present, was the underfeeding and actual privation that were prevalent in Glasgow. The Scottish Board of Health had issued a circular, as a result of which the parish councils had discontinued the payment of the extra 4s. which they had been giving. The parish council doctors found, when they went into the homes of the poor and examined the children, that they did not require medicine, but that they were in need of food. He personally knew of cases of starvation in his own division.

Viscountess ASTOR asked for the names and addresses of the people said to be starving.

Mr. BUCHANAN said that if Lady Astor would go to his division he would show her scores of people who were starving.

Viscountess ASTOR said that Mr. Buchanan had no right to make such assertions unless he could prove them.

Sir J. GILMOUR (Secretary of State for Scotland) said that it had been represented to him that there had been cases of starvation in Scotland. He had asked repeatedly for the names and addresses of any individuals in such a condition and had ordered investigations to be made by the staff of the Scottish Board of Health. He was satisfied that, apart from any question as to whether individuals were getting a sufficient amount of certain constituents in their food, so far as actual starvation was concerned no such cases had been substantiated. It had been represented to him that medical men had found, when called in to attend certain children, that what was required was not medicine, but nourishment. It was within the province of medical men to give a prescription for nourishment. If failure to do that had taken place, and it was within the knowledge of any Member, he asked that the cases should be brought to the notice of the Scottish Board of Health. Throughout the whole of the dispute in the coal industry the one object of the Scottish Office had been to see that food and other relief was provided where needed, and particularly for children. As a matter of fact, in spite of the dispute, there had been an improvement in the health of Scottish children. The allegation of starvation was utterly unfounded.

Mr. MAXTON said that probably there was no starvation in the highly technical sense of the word, as used in the State departments. But that there was serious hardship among Scottish children, arising from lack of food and clothes, and from malnutrition and physical deterioration, was beyond all doubt.

Mr. NEVILLE CHAMBERLAIN (Minister of Health), replying to the debate, said that on the whole the boards of guardians deserved the highest possible credit for the way they had handled a difficult situation. It had been surprising to read in the newspapers suggestions that the Ministry had been responsible for a policy of starvation, for it might not unfairly be said that the coal strike had been financed by the boards of guardians. Taking the 78 unions, in which 80 per cent. of the miners were comprised, the average weekly domiciliary relief given during the 1921 strike was £94,000. In the same unions, during the present stoppage, the weekly total was £312,000. How, then, was it possible to say that the policy of the Ministry was to cut down relief? It was a fact that there had been no evidence of malnutrition and there had been repeated reports that the children were actually better fed than they were when their fathers were at work. There must necessarily be hardship and suffering when one of the basic industries of the country had ceased to work. While there were administrative difficulties in the way of boards of guardians providing boots for necessitous children, he had told a deputation that he was sympathetic, and that he would be prepared to consider applications from boards of guardians to make some provision, to a limited extent, to voluntary organisations, where they existed, for providing boots for children. It was not a possible solution of the problem of necessitous areas to finance guardians by way of grants, as had been suggested by Labour speakers. By a system of block grants, when it was possible to allocate them on a fair and prope basis, taking into account not merely population, but als capacity to pay, as measured by rateable value, it might b possible to devise a scheme which would bring relief t necessitous areas without doing injustice to any othe part of the country. That was the policy to which he looke forward for a permanent solution of the problem. He wa only awaiting an opportunity to put that policy into effect

The motion to reduce the vote was defeated by 215 vote to 81, and the vote was agreed to.

Disease among British Troops in India.

Mr. DAY asked the Secretary of State for War the personne of the committee recently appointed by the Army headquarter at Simla to investigate the steps to be taken to comba disease among British troops in India.—Earl WINTERTO replied: A committee was assembled in Simla in Octobe last to consider whether any modification in policy in com bating venereal disease among British troops was desirabl in the light of experience during recent years. The com mittee was composed of officers commanding the 2n Battalion Lancashire Fusiliers and the 2nd Battalio Lincolnshire Regiment, the chaplain to Metropolitan, consulting dermatologist at Army headquarters; the deputy director, personal services, at Army headquarters; and th deputy-assistant adjutant-general at Army headquarters The report of the committee is now under the considera tion of the Commander-in-Chief.

Encephalitis Lethargica.

Captain FAIRFAX asked the Minister of Health if he woul give the latest available figures for the cases of and deaths fron encephalitis lethargica, and state what progress had bee made in arresting this disease or investigating its causes.— Sir KINGSLEY WOOD replied: The total number of case of encephalitis lethargica notified in England and Wale during the present year up to Nov. 6th was 1946, and th approximate number of deaths up to the end of Augus was 935. As regards the second part of the question my hon. friend understands that the Medical Researc Council will shortly publish a report on this disease con taining a statement of the progress which has been made i the search for its cause. Until this has been discovered and means have been devised for controlling the develop ment and spread of the disease, it is necessary to rely o those methods which have proved efficacious in dealing wit other infectious diseases.

Infantile Paralysis in Leicester and Broadstairs.

Captain FAIRFAX asked the Minister of Health how man deaths had resulted from the outbreaks of infantile paralysi in Leicester and Broadstairs.—Sir KINGSLEY WOOD replied I would refer my hon. and gallant friend to the reply which I gave on this subject on Oct. 25th last. There have been no further deaths from infantile paralysis in Leicester since that date, but three more deaths have occurred as a result of the Broadstairs outbreak.

New Officials in the Ministry of Health.

Lieut.-Colonel HORLICK asked the Minister of Healt how many new officials had been appointed by his depart ment since Jan. 1st, 1926, how many were established and what would be the total salaries payable for the present financial year as compared with 1920.—Mr. NEVILLE CHAMBERLAIN replied: 491 new officials have been appointed in my department since Jan. 1st, 1926, of whom 423 are established. The total amount provided for salaries in the estimates for my department for the current financia year is £1,466,214, as compared with an expenditure o £1,915,547 for the financial year 1920–21.

DONATIONS AND BEQUESTS.—Mr. Thomas Martin, Pollokshields, Glasgow, left £2000 to the Royal Hospital for Sick Children, Glasgow, to endow a "Margaret Inglis Sim" cot and £100 to name a cot the "Thomas Martin" cot, £1000 to the Glasgow Royal Cancer Hospital, to be used especially for research work, £1000 to Biggart Hospital Home, Prestwick, to endow and name the "Margaret Inglis Sim" cot, £500 to the Glasgow Poor Children's Fresh Air Fortnight, and Cripple Children's League, £1000 (or such sum as may be required) to the West Highland Cottage Hospital to name the "Margaret Inglis Sim" bed, and the residue of the property, subject to other legacies and certain annuities, in equal shares to the East Park Homes, Glasgow, the Maternity Hospital, Glasgow, and the Samaritan Hospital, Glasgow.—Mr. Samuel Murphy, Colinton, Edinburgh, solicitor, left £1000 each to Chalmers Hospital, Banff, Edinburgh Royal Infirmary, Edinburgh Hospital for Sick Children, the Hospital at Newington House, Edinburgh, for Blinded Sailors and Soldiers, and the Edinburgh Blind Asylum.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Comdrs.—G. G. Vickery to *President*, addl., for three months' post-graduate course; F. G. Hitch to *Marshal Soult*; A. E. P. Cheesman to *President*, addl., for course; A. C. Paterson to *Victory*, addl., for Haslar Hospl., temp.; and M. W. Haydon to *Tiger*, on recommg.

Surg. Lt.-Comdr.—B. S. Collings to *Marshal Soult* and to *Canterbury*.

Surg. Lts.—H. Gow to *Marshal Soult*; P. J. Maguire to *Tiger*; and J. L. Lean to *Victory*, for R.N. Hospital, Haslar.

ROYAL NAVAL VOLUNTEER RESERVE.

Prob. Surg. Lt. (D) L. A. T. McLean is confirmed in his rank.

Prob. Surg. Sub-Lt. D. R. W. Burbury to be Surg. Sub-Lt.

ROYAL ARMY MEDICAL CORPS.

Capts. to be Majs.: D. McKelvey, C. H. K. Smith, C. Wilson, H. N. Stafford (Prov.), and J. B. Fotheringham.

TERRITORIAL ARMY.

General List.—Maj. H. W. Symons to be Lt.-Col. and to comd. the 49th (2nd Northern) Casualty Clearing Station, vice Lt.-Col. (Bt. Col.) F. Darlow vacated.

Capt. F. W. Martin resigns his commn. and retains his rank.

Capt. J. A. L. Loudon resigns his commn. and is granted the rank of Lt.

Lt.-Col. C. Helm, Res. of Off., to be Capt.

Capt. T. L. Clark, late R.A.M.C., to be Capt.

Capt. D. Crellin, R.A.M.C., to be Div. Adjt., 46th (N. Midland) Div., vice Maj. E. A. P. Brock, R.A.M.C., vacated.

Capt. M. C. Paterson, R.A.M.C., to be Div. Adjt., 50th (Northumbrian) Div., vice Maj. J. M. Mackenzie vacated.

General Hospitals.—Lts. R. Riley and G. B. W. Walker resign their commns.

RESERVE OF OFFICERS.

Capt. (Bt. Maj.) J. B. Orr, from the Active List, to be Capt. (Bt. Maj.).

SUPPLEMENTARY RESERVE OF OFFICERS.

Capt. A. D. Gorman, late R.A.M.C. Spec. Res., to be Lt., and relinquishes the rank of Capt.

ROYAL AIR FORCE.

Temp. Capt. E. A. Wheeler, General List (Army), Dental Surgeon, is granted a temporary commission as a Flight Lt. on attachment to the R.A.F.

Flight Lt. J. J. Boyle (Capt., Army Dental Corps), relinquishes his temporary commission on return to Army duty.

INDIAN MEDICAL SERVICE.

Lt. W. Lawrie to be Capt. (prov.).

Sat Chit Anand, J. T. Fernandez, Lachhman Das Sarronwala, and Henry Brij Nath Swift to be Temp. Lts.

The King has approved the retirement of Maj.-Gen. Sir R. Charles Macwatt, C.I.E., K.H.S.

HONORARY SURGEON TO THE KING.

His Majesty has approved of the appointment of Maj.-Gen. J. S. Gallie, C.M.G., D.S.O., late Royal Army Medical Corps, to be honorary surgeon to the King, in succession to Maj.-Gen. D. J. Collins, C.B., C.M.G., late Royal Army Medical Corps, who has retired.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, Nov. 22nd.—8 P.M., ODONTOLOGY. Dr. E. W. Fish will read Further Notes on the Lymph Supply of Enamel and Dentine to open the discussion on his Original paper read before the Section on April 26th.

TUESDAY.—5 P.M., MEDICINE. Discussion on The Diagnosis and Treatment of Colitis. Dr. A. F. Hurst and other speakers.

WEDNESDAY.—5 P.M., COMPARATIVE MEDICINE. Dr. H. H. Scott: Tuberculosis in Captive Wild Animals as Compared and Contrasted with the Disease in Man.

THURSDAY.—5.30 P.M., BALNEOLOGY AND CLIMATOLOGY. Dr. R. Ackerley: The Spa Doctor's Contribution to the Improvement of National Health. The annual dinner of the Section will be held at the Café Royal at 7.30 the same evening. 8.30 P.M., UROLOGY. Clinical Pathological Meeting. Specimens will be on view from the afternoon of Wednesday, Nov. 24th.

FRIDAY.—5 P.M., STUDY OF DISEASE IN CHILDREN. (Cases at 4.30 P.M.) Cases: Dr. Rolleston: Case of Striæ Patellares following Typhoid Fever. Dr. Cautley: (1) Hemiparesis of Sudden Onset; (2) Intra-Pulmonary Cyst? Mr. Twistington Higgins: Case of Winged Scapula. 8 P.M., EPIDEMIOLOGY AND STATE MEDICINE. Paper: Dr. G. F. Buchan (M.O.H. Willesden): The Hospital in Relation to the Public Health.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY, Nov. 22nd.—8.30 P.M., Discussion on Recent Advances in the Treatment and Diagnosis of Bronchiectasis, to be introduced by Dr. Clive Riviere, followed by Mr. J. E. H. Roberts.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, Nov. 22nd, to SATURDAY, Nov. 27th.—FELLOWSHIP OF MEDICINE. Special lecture at the Medical Society of London, 11, Chandos-street, Cavendish-square, W. Thurs., 5 P.M., Mr. Harold Chapple: The Emergencies of Pregnancy and Parturition. Free to members of the medical profession.—ST. MARK'S HOSPITAL, City-road. Tues., 11 A.M., Mr. B. Leggett: Radiological Investigation of the Colon and Rectum. Free to members of the medical profession.—ROYAL LONDON OPHTHALMIC HOSPITAL, City-road. Wed., 12 noon, Clinical Demonstration. Free to members of the medical profession.—ROYAL WATERLOO HOSPITAL, Waterloo-road, S.E. Special course in Medicine, Surgery, and Gynæcology.—ST. JOHN'S HOSPITAL, Leicester-square, W.C. Special course in Dermatology. Practical demonstrations in pathology if desired.—ST. MARK'S HOSPITAL, City-road. Week's comprehensive course.—WEST END HOSPITAL FOR NERVOUS DISEASES, 73, Welbeck-street. Late afternoon course (5 P.M.), demonstrations upon selected cases. Further information from the Secretary.

UNIVERSITY COLLEGE, Gower-street, W.C.

WEDNESDAY, Nov. 17th.—5 P.M., Dr. C. H. Best: Insulin. (Third of four advanced lectures in Physiology.)

POST-GRADUATE HOSTEL, Imperial Hotel, Russell-square, W.C.

MONDAY, Nov. 22nd.—9 P.M., H. J. Patterson: Gastro-enterostomy.

THURSDAY.—9 P.M., Symposium: Cerebral Localisation in the Clinical Subject. The following will take part: Dr. M. Gordon Holmes (Chairman), Dr. W. J. Adie, Mr. Donald Armour, Mr. A. P. Bertwistle, Dr. Carmichael, Dr. Macdonald Critchley, Mr. L. Bathe Rawling, Dr. F. M. R. Walshe.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street.

THURSDAY, Nov. 25th.—4 P.M., Mr. Fairbank: Coxa Vara.

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL, Gray's Inn-road, W.C.

FRIDAY, Nov. 26th.—4 P.M., Mr. Gill Carey: Diagnosis of Sinus Disease.

NATIONAL HOSPITAL, Queen-square, Bloomsbury, W.C.

MONDAY, Nov. 22nd.—2 P.M., Dr. Hinds Howell: Out-patient Clinic. 3.30 P.M., Mr. Elmquist: Demonstration of Re-educative Methods in Exercise Room.

TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Mr. Armour: Cranio-cerebral Topography.

THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Dr. Gordon Holmes: Cerebral Disturbances of Vision.

FRIDAY.—2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Mr. Elmquist: Demonstration of Re-educative Methods in Exercise Room.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.

MONDAY, Nov. 22nd.—10 A.M., Mr. MacDonald: Genito-Urinary Operations. 12 noon, Mr. Simmonds: Fractures and Applied Anatomy. 2 P.M., Mr. Donald Armour: Operations.

TUESDAY.—10 A.M., Medical Registrar: Clinical Methods. 12 noon, Dr. Burrell: Chest Cases. 2 P.M., Mr. Sinclair: Surgical Out-patients.

WEDNESDAY.—12.15 P.M., Dr. Burnford: Medical Pathology. 2 P.M., Mr. Tyrrell Gray: Operations. 2 P.M., Dr. Owen: Medical Out-patients.

THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Department. 2 P.M., Mr. Bishop Harman: Eye Department. 3 P.M., Sir Henry Simson: Gynæcological Wards.

FRIDAY.—10.30 A.M., Dr. Dowling: Skin Dept. 11 A.M., Dr. Pritchard: Modern Methods in Medicine. 2 P.M., Mr. Vlasto: Throat, Nose and Ear Dept.

SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy. 10 A.M., Mr. Banks-Davies: Operations on Throat, Nose, and Ear.

Daily, 10 A.M. to 5 P.M., Operations, Medical, Surgical, and Special Out-patient Departments, Saturdays, 10 A.M. to 1 P.M.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY, Nov. 22nd.—10 A.M. Surgical Clinic. 2 P.M., Medical Cases in the Wards. 2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.
TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.
WEDNESDAY.—2.30 P.M. to 5 P.M., Medical Skin and Eye Clinics. Operations.
THURSDAY.—11.30 A.M., Dental Clinic. 2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose, and Throat Clinics. Operations.
FRIDAY.—10.30 A.M., Throat, Nose, and Ear Clinics. 2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.
On Wednesday, Nov. 24th, and Friday, Nov. 26th, at 2.30 P.M., there will be special demonstrations of Eye and Medical Cases by Mr. N. B. B. Fleming and Dr. F. G. Crookshank respectively.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Nov. 23rd.—5 P.M., Dr. A. Whitfield: Diseases Due to Fungi (2).
THURSDAY.—5 P.M., Dr. J. H. Sequeira: Tuberculosis Cutis (1).

ST. JOHN'S HOSPITAL DERMATOLOGICAL SOCIETY (Incorporating the London Dermatological Society), 49, Leicester-square, W.C.
WEDNESDAY, Nov. 24th.—4.15 P.M., Clinical Cases will be shown.

ST. MARGARET'S HOSPITAL FOR WOMEN, Acomb-street, Whitworth Park, Manchester.
WEDNESDAY, Nov. 24th.—4 P.M., Mr. A. C. Magian: Electrotherapeutics and X Rays in Gynæcology.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.
FRIDAY, Nov. 26th.—3.30 P.M., at the Royal Infirmary: Mr. Mouat: Septic Infections of the Hand.

ANCOATS HOSPITAL POST-GRADUATE COURSE.
THURSDAY, Nov. 25th.—4.15 P.M., Mr. F. Holt Diggle: Tonsillectomy.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.
TUESDAY, Nov. 23rd.—4 P.M., Prof. Adam Patrick: Diabetic Coma. Discussion to be opened by Dr. A. Hynd.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, Nov. 23rd.—4.15 P.M., Dr. A. E. Barclay: Radiology in Relation to Medicine, Particularly to Compensation Work.
FRIDAY.—4.15 P.M., Dr. G. R. Murray: Adaptability in Disease.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C.
WEDNESDAY, Nov. 24th.—4 P.M., Dr. C. W. Saleeby: From Heliotherapy to Heliohygiene.

CHADWICK PUBLIC LECTURES.
MONDAY, Nov. 22nd.—7.30 P.M. (in the Lecture Hall of the University of Sheffield). Mr. H. E. Stilgoe: Water-Supply in its Relation to Public Health.

Appointments.

FAIRER, J. A., M.D. Manch., D.P.H., has been appointed County Medical Officer of Health for Leicestershire.
JAGO, J. W., M.B., Ch.B. Sheff., Certifying Surgeon under the Factory and Workshop Acts for the Eyam District of the County of Derby.
SAVAGE, J. J., M.B., B.Ch. Oxf., F.R.C.S. Eng., Resident Medical Officer of the Freemasons Hospital and Nursing Home.
SMITH, A. GORDON, M.B., Ch.B. Edin., F.R.C.S. Eng., Professor of Anatomy in the Medical College, Ceylon.
St. Paul's Hospital, Endell-street, W.C.: MUTCH, N., M.A., M.D. Camb., F.R.C.P. Lond., Honorary Physician; O'DONOVAN, W. J., M.D. Lond., M.R.C.P. Lond. Honorary Physician in Charge of Skin Department; COOK, F., M.B. Lond., F.R.C.S. Eng., Honorary Gynæcologist.
University of Manchester: SUSMAN, W., M.D. Ontario, Lecturer in Morbid Anatomy and Histology; POLSON, C. J., M.B., Ch.B. Birm., Assistant Lecturer in Chemical Pathology; DOWNIE, A. W., M.B., Ch.B. Aberd., Assistant Lecturer in Bacteriology.

Vacancies.

For further information refer to the advertisements columns.

Brighton, Royal Sussex County Hospital.—Cas H.S. £120.
Brighton, Sussex Maternity and Women's Hospital.—Second Res. H.S. £100.
Bristol General Hospital.—Hon. Clin. Assts.
Cambridge, Addenbrooke's Hospital.—H.S. At rate of £130.
Cancer Hospital, Fulham-road, S.W.—Pathologist. £1000. Also H.S. At rate of £100.
Cancer Hospital, Fulham-road, S.W.—Jun. Radiologist. £500.
Canterbury, Kent and Canterbury Hospital.—Two Res. M.O.'s. At rate of £125.
Carlisle, Cumberland Infirmary.—Hon. Surg.
Central London, Throat, Nose and Ear Hospital, Gray's Inn-road, W.C.—Out-patient Registrar. £30. Also Asst. Out-patient Registrars.
Charing Cross Hospital, W.C.—Res. M.O. £400. Res. Anæsthetist. At rate of £100. Also Asst. P.
Chelsea Hospital for Women, Arthur-street, S.W.—Jun. H.S. At rate of £100.
East African Medical Service.—Two Asst. Bacteriologists. £600.
Eastern Dispensary, Leman-street, E.—Gynæcologist.
Evelina Hospital for Children, Southwark, S.E.—H.S. £120.
Great Yarmouth General Hospital.—H.S. £150.
Hammersmith School, Treatment Centre.—Surg. for Ear, Nose and Throat Dept.
Hampstead General and North-West London Hospital, Haverstock-hill, N.W.—H.S. Also Cas. Surg. O. to Out-patient Dept. Each at rate of £100.
Hospital for Sick Children, Great Ormond-street, W.C.—H.P. and H.S. Each at rate of £50.
Hull Royal Infirmary.—Asst. H.P. At rate of £130.
Ipswich, Heathfield Infirmary, &c.—Asst. Res. M.O. £250.
Italian Hospital, Queen-square, W.C.—H.S. At rate of £80.
Kirkcaldy Hospital.—Res. M.O. At rate of £125.
Lincoln County Hospital.—Jun. H.S. £150.
London Temperance Hospital, Hampstead-road, N.W.—Hon. P.
Lucknow University.—Prof. of Anatomy. Rs.1450 per mensem.
Manchester Northern Hospital for Women and Children.—Sen H.S. and Jun. H.S. £130 and £100 respectively.
Manchester Royal Infirmary.—Res. M.O. £200.
Margate, Royal Sea-Bathing Hospital for Surgical Tuberculosis.—Two H.S.'s. At rate of £200.
Metropolitan Ear, Nose and Throat Hospital, Fitzroy-square. Anæsthetist.
Miller General Hospital for South-East London, Greenwich-road S.E.—Asst. P. and two Asst. S.'s.
National Hospital, Queen-square, W.C.—Res. M.O. £200.
Nordrach-upon-Mendip Sanatorium, Blagdon, near Bristol.—Asst. M.O.
Norwich, Norfolk and Norwich Hospital.—Cas. O. and H.S. £120.
Oxford, Wingfield Orthopædic Hospital.—Res. Surg. O. and H.S. At rate of £200 and £150 respectively.
Prince of Wales's General Hospital, N.—Hon. Clin. Assts.
Queen Mary's Hospital for the East-End, Stratford, E.—Res. M.O H.S.'s., H.P.'s., &c.
Royal College of Physicians, Pall Mall East.—Milroy Lecturer for 1928.
Royal Free Hospital, Gray's Inn-road, W.C.—Surg. Reg. £200 Med. and Gynæcological Regs. Each £100. Also H.S.'s. H.P., &c. £100 each.
St. John's Hospital, Lewisham, S.E.—Cas. O. At rate of £100.
St. Marylebone General Dispensary, 30, Marylebone-lane, W.—Hon. Asst. in Ultra-Violet Radiation Dept.
St. Thomas's Hospital.—Surgical Registrar.
Salford Royal Hospital.—Two Hon. Asst. S.'s.
Shanghai Municipal Council, Public Health Dept.—Asst. Pathologist. Tls.600 per mensem.
South Uist Parish and Northern Division.—M.O. and Pub. Vaccinator. £620.
Southwark Hospital, East Dulwich-grove, S.E.—Radiologist. 150 guineas.
Stockport Infirmary.—Three Visiting Anæsthetists.
University College Hospital, Gower-street, W.C.—Two Clin. Assts. to X Ray Dept.
Windsor, King Edward VII. Hospital.—Jun. H.S. At rate of £100.

The Chief Inspector of Factories announces the following vacant appointments for Certifying Factory Surgeons: Cannock (Staffs), Woolpit (Suffolk), Littleborough (Lancs), and Clacton-on-Sea (Essex).

Births, Marriages, and Deaths.

MARRIAGES.

ANDREAE—BROWN.—On Oct. 16th, at Mussoorie, India, Eric Burn Andreae, M.R.C.S., L.R.C.P., to Edith Muriel Brown younger daughter of the late Rev. Alexander Brown and of Mrs. Brown, Trevail, Grampound.
DICKINSON—CLARKE.—On Nov. 15th, at St. Mary Abbot's, Kensington, C. R. Dickinson to Gladys Maud Clarke L.R.C.P., M.R.C.S.
MURRAY—LAING.—On Nov. 10th, at Queen-street Congregational Church, Arbroath, John Murray, *M.C.*, M.B., Ch.B Manch., to Agnes Ferguson, elder daughter of David Laing, T.D., M.D., and Mrs. Laing, Arbroath.

DEATHS.

FRY.—On Nov. 9th, Walter Ernest Fry, M.R.C.S., L.R.C.P. D.P.H., of West Kensington-gardens, W.
PALMER.—On Nov. 12th, at Stoke House, Gosport, Hants Charles John Linton Palmer, M.R.C.S., L.R.C.P., aged 54 years.
RANDLE.—On Nov. 14th, suddenly, Horace Andrews Randle M.D., of Pendleton, Lancashire, and Birkbeck-road Acton, W., aged 71.
REYNOLDS.—On Nov. 12th, 1926, at 730, Fulham-road, S.W. Joseph Henry, M.B., C.M. Edin., the dearly beloved husband of Blanche Reynolds, and son of James Reynolds, Esq. of Gloucester, aged 56.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

GARAGE ACCIDENTS.

WITH the growth of motoring has grown also the tale of motor accidents, and an inconspicuous but none the less an important and interesting class of these take place in the garage. A few garage accidents are caused by the mishandling of electric current or by starting the engine with the gear in, but the majority are due to poisoning by exhaust gases. Although motoring is thirty years old, and the first warning against the danger of running an engine in a confined space was published twenty years ago, a very small number even of professional drivers are aware of the deadliness of exhaust fumes. The reason for this ignorance is possibly that carbon monoxide, the lethal constituent of these fumes, kills without leaving any obvious trace, and many garage deaths are wrongly ascribed to apoplexy. The presence near the body of gastric contents is likely to mislead the police or local practitioner into suspecting an alcoholic condition, and the symptoms, if observed, support the mistake. In other cases epilepsy and petrol poisoning are wrongly suggested as causes of death. The gases are the product of the imperfect combustion of hydrocarbons, and the worse the combustion the greater will be the output of CO, which with CO_2 constitutes the bulk of the fumes. A dangerous concentration—according to some experiments 1 in 1500—may easily be reached in narrow lanes, corners, and roofed spaces. When an engine is run in a small closed shed it produces a high concentration at once, especially if the carburetter air vent is closed or nearly so. As much as 14 per cent. is reached in a few minutes, but before this occurs the driver, if he has been imprudent enough to shut himself in with the car, is dead. Even coal gas, at its worst, contains no more than 5 to 10 per cent. of CO, and no one would stay in a kitchen with unlighted gas streaming from the oven jets, but he would be safe there compared with the car owner working on a running engine in a small garage. CO is the deadlier for being odourless and colourless. A concentration of 1 in 1000 or 1 in 2000 will saturate the blood in an hour or less to the 60 per cent. or so at which death occurs. Even as minute a trace in the atmosphere as 1 in 5000 will produce headache, malaise, and unsteadiness of the legs in two to three hours. As might be expected, therefore, 3 per cent. will produce symptoms of acute poisoning in a quarter of an hour, and less if the subject is working hard. The safety limit in American mines is held to be 1 in 5000. Besides poisoning the air, a running engine quickly uses up the oxygen. The concentration is heaviest at first just at the end of the exhaust pipe, and the owner moving to and fro stirs the mixture. He notices nothing for a time, but then suddenly, especially if he happens to take a deep breath of an extra strong concentration, he feels a violent headache, a loss of balance, and a deadly weakness at the knees. His efforts to breathe make matters worse, and, sinking to the floor where the fumes are heaviest, he soon succumbs. Many professional drivers are familiar with the beginning of this syndrome, but few treat it with the importance it deserves.

Dr. J. Dettling[1], of the Medico-Legal Institute of Zürich University, has been studying the question from the point of view of public security, and has suggested certain precautions which should, if given the status of law, minimise what is undoubtedly a growing public danger. He proposes that every place where cars are stored should have permanent and ample communication with the outside air, such as large unclosable ventilators. This will excite the wrath of owners by forcing them to empty their radiators every night in winter, but that cannot be helped. Further, the running of an engine in a small garage should, he suggests, be absolutely forbidden, as poisoning can occur even with open doors and windows. It should be obligatory to post an official warning in all garages. Real and lasting prophylaxis, however, can only be undertaken by physician, sanitary official, architect, motorist, and chemist working in coöperation.

SANOCRYSIN IN PULMONARY TUBERCULOSIS.

A PAPER on the immediate results of treating pulmonary tuberculosis with sanocrysin appears in the *Semana Medica* of Oct. 7th. The authors, Dr. E. M. F. Rey, Dr. F. E. Soneo, and Dr. Priam, give the results of treatment in fifty cases which had not been benefited by previous care in a sanatorium. They are not very enthusiastic about the results, which, they say, were "not so favourable as they could have wished." Of the 50 treated, 33 improved, those state without sanocrysin might have remained stationary or got worse; 12 remained the same, 3 died, and 2 were worse. On their face value these figures appear satisfactory, and justify the authors' opinion that sanocrysin, with other gold preparations, should be considered as a weapon in the antituberculous armoury, pending further improvements in their preparation and use. They mention a case of acute miliary tuberculosis in which "unexpected results" followed treatment, but they give no details, and unfortunately do not include a description of it in their list.

[1] Schweiz. Woch., August 26th, p. 832.

PRACTICAL JOKES WITH COMPRESSED AIR.

WITH the ever-increasing use of high-pressure air for drills, riveters and industrial cleaning, more and more men are being brought in to first-aid stations with rupture of the bowel. Considering the amount of compressed air that is used in this country it is rather surprising that clinical accounts of these accidents all seem to appear in foreign publications. The disaster is generally due to the misguided humour of a fellow worker who has thought that it would be an excellent joke to inflate his unsuspecting companion per rectum. The first case, mentioned by Dr. G. W. Stone, of London, is the only one on record in which the nozzle of the hose was believed actually to have been inserted in the anus. Drs. F. B. Block and M. I. Weissman described a typical case, in the Journal of the American Medical Association for May 22nd, in which the patient had a tear an inch long at the junction of the rectum and sigmoid. The column of air had forced itself through several layers of clothing and the two sphincters although the nozzle was held an inch or more away from the body. Dr. A. W. Andrews[1] gave a reasonable explanation by pointing out that air at a pressure of 100 lb. or over forms a solid column several inches long in front of the nozzle, while the floor of the pelvis, owing to its peculiar construction, constitutes a funnel with the anus at its apex. The involuntary contraction of the levator and sphincter narrows and deepens the funnel, assisting the air to enter the bowel. Moreover, it only requires a pressure of 7 to 12½ lb. to rupture the intestinal wall. The most recent review of the subject appears in the same journal[1] for October last, where Dr. George L. Hays records 32 cases culled from medical literature. No doubt there are many observations which are never reported. Dr. Hays also mentions a report by Petrin[2] of a fatal accident which was caused by a workman trying to shut off pressure by kinking the hose and then holding the end between his teeth. He slipped and relaxed his hold, and the air stream ruptured his œsophagus. The condition of rupture of the bowel is not hard to diagnose, as the abdomen is enormously distended and is tympanitic all over, and the history will reveal the connexion with high-pressure air. It ought to be possible to prevent all but a very few of these accidents by the systematic publication of oral and printed warnings, in which attention is called to the fact that the nozzle of the apparatus need not actually be in contact with the body to produce serious injury. The most effective treatment is emergency puncture and early laparotomy. The sigmoid is usually the site of the rupture, for the anus and rectum escape injury because of their outside support.

COLDS AND CHILL.

SOME years ago Mr. Alexander Francis[3] said that in nine cases out of ten a chill is the exciting cause of an infective catarrh, and suggested that what usually lies behind the chill is an unstable vasomotor system. With such instability, he said, a draught or sudden change of temperature produces a localised vaso-constriction, with a compensatory vaso-dilatation elsewhere. If this area of dilatation happens to be in the mucous membrane of the naso-pharynx or bronchial tubes "it provides, as it were, an incubator for the organisms lurking there, which suddenly bursts into activity and a catarrh results." A similar suggestion has now been put forward in France by Dr. Jean Tarneaud,[4] who, while accepting the infective origin of colds, believes that the causal factor in the vast majority of cases is a shock to the vegetative nervous system caused by a sudden change in temperature. This shock, he considers, causes a reflex vasomotor disturbance of the nasal mucous membrane, which disturbance "allows the infective element to come into play." The arguments put forward in support of his contentions are the general liability to colds at times of sudden change in the weather, the special liability of certain persons to them after any exposure to cold, and the fact that a congestion of the nasal mucous membrane is the invariable first sign of an attack. Dr. Tarneaud claims that the only effective prophylactic treatment is that which aims at lessening the sensitiveness of the nervous system to shock and of the nasal mucosa to vascular disturbances—i.e., general hygiene aiming at desensitisation to cold—and

[1] Surgery, Gynæcology, and Obstetrics, January, 1911, xii., 63.
[2] Beitr. z. Klin. Chir., 1908, lxi., 265.
[3] Brit. Med. Jour., 1919, ii., 223.
[4] Paris Médical, Sept. 4th, 1926.

the local use of the galvano-cautery. The only drugs which are useful, he thinks, are those which affect the vegetative nervous system, such as adrenalin, aconite, and belladonna.

These suggestions are interesting, but it has to be remembered that the local vascular dilatation which these observers believe to be so harmful in favouring the growth and penetration of pathogenic germs is the natural response throughout the body to microbic infection. From this it might be assumed to be a defence rather than a source of weakness, and, in fact, we are taught that the increased secretion helps to wash away germs while the increased blood-supply dilutes the toxins and increases the phagocytic defences. And yet it must be admitted that chronic, as opposed to acute, congestion does favour microbic invasion as the beneficial results of removing such congestion by various local operations testify. Probably there are many different types of cold, from the undoubtedly infectious ones which occur in epidemics to the transient rhinorrhœa which afflicts sensitive people after the slightest chilling. It is the first of these on which emphasis is laid, for example, in Prosser White's monograph on Catarrhal Fevers, whilst the second seems to be the type which has chiefly come under the notice of Dr. Tarneaud.

CONTRACEPTION BY SPERMATOXIN.

Dr. S. S. Rosenfeld, adjunct gynæcologist and obstetrician at the Lebanon Hospital, New York, has carried out some interesting experiments on the production of a spermatoxin in human beings immunised with injections of living spermatozoa. The preliminary report appears in the *American Journal of Obstetrics and Gynecology* (vol. xii., No. 3). Three women received repeated injections of human semen, but in no case was a spermatoxic reaction subsequently demonstrable in the serum. Negative results were obtained after the use of both living and dead spermatozoa. It has, of course, been claimed that women who have been injected with semen can avert pregnancy for about 20 months, the temporary sterility being due to the production in their blood of a spermatoxic antibody. If this is correct a new contraceptive method would become available for women in whom pregnancy is contra-indicated. Dr. Rosenfeld's results appear, however, to throw doubt on these statements. At any rate in the light of his experience many injections of semen would appear to be necessary in order to obtain a temporary sterility, so that as a practical contraceptive method immunisation with injections of semen need not be considered very seriously.

AN INSURANCE COMPANY'S NURSING SERVICE.

IN 1924 the Mutual Property Insurance Company, Ltd., of London, instituted a free nursing service for the benefit of its sickness and accident policy-holders. These people, who are mainly of the industrial classes, received attention and advice at the hands of a nursing sister, who visited her patients by car. As more and more patients began to take advantage of the service, it was found impossible for a single visiting nurse to carry on the work. In April, therefore, the service was reorganised, and the policy-holders, instead of receiving visits from the Company's nurse, are now attended by members of 96 district nursing associations with which the Company has become affiliated. The cost of the visits is entirely defrayed by the Company, and the policy-holders naturally receive more prompt attention than was formerly possible.

Since this nursing service was started in 1924, nearly 9000 visits have been made; the fact that 1100 of these were made during September last shows that the scheme is growing in its scope. In connexion with this welfare work, the Mutual Property Insurance Company has distributed over 300,000 folders and leaflets dealing with personal health.

COÖPERATIVE BABY CARE.

THE little book, "To Wives and Mothers," published by the National League for Health, Maternity, and Child Welfare, has long been recognised as a useful guide in the daily task of caring for children and in facing the common difficulties which arise in most homes where there is a young family. The eighth edition has just been published under the new title "To Mothers and Fathers."[1] As the new chapter on a Father's Duty only occupies two and a half pages, it is evidently intended that the father, equally with the mother, should acquaint himself with the earlier chapters; he is indeed specially recommended to study the section on the expectant mother, to make sure that all proper precautions are being taken and preparations made for the safeguarding of his wife and the coming child. His responsibility in giving the baby the best chance, by keeping the rules of the game, is also emphasised, as in the sentence: "Regular feeding will only be possible if you help; if you are out with your wife you must make it your duty to bring her home in time for baby's feed."

The preface expressly states that the booklet is not designed to replace medical and other expert advice available at a welfare centre, but it contains in its 79 pages a remarkable amount of homely counsel on the well-being of the expectant and nursing mother, on many aspects of child-care up to the age of 5, and on home management, as well as sound hints on the nursing of various illnesses, and the avoidance of spreading infection. The table on p. 64, setting out the period of incubation, of quarantine, and the time when the patient may be regarded as free from infection after the commonest infectious diseases, is especially useful. The few misprints scarcely mar a well-balanced and carefully compiled pamphlet.

[1] To Mothers and Fathers. How to Keep Yourselves and Your Children Well and Strong. National League for Health, Maternity and Child Welfare, 117, Piccadilly, London, W. 1. 6*d.*, post free.

WEIGHTS AND MEASURES.

To the Editor of THE LANCET.

SIR,—Old table books tell us that apothecaries mix their medicines by apothecaries' weight, but buy and sell their drugs by avoirdupois weight. The apothecaries' *drachm* is 60 grains, and the avoirdupois *dram* 27½ grains; the apothecaries' ounce 480 grains (precisely the weight of 5*s.* 6*d.* in silver); the avoirdupois ounce 437½ grains (practically the weight of 5*s.* in silver). If a scruple is asked for, it is distinctly 20 grains (practically the weight of a 3*d.* bit); but if a drachm or dram (the sound is the same) or an ounce is demanded, what is supplied over the counter, retail or wholesale? If the demand is in writing, and the apothecaries' symbol for drachm or ounce prefixed, I presume that 60 or 480 grains are supplied, and if dr. or oz. is prefixed, 27½ or 437½ grains are supplied. But where ambiguity arises, is it left to the discretion of the server how many grains to supply? I have been told that the British Pharmacopœia of 1864 changed the weights and measures from apothecaries' to imperial, and that the apothecaries' symbols were then applied wrongfully to avoirdupois weights and measures.

I am, Sir, yours faithfully,

London, Nov. 5th, 1926. PERTINAX.

A DOUBTFUL COMPLIMENT.

A PHYSICIAN attached to an important hospital sends us the following letter recently received from a patient:—

DEAR SIR,—Please excuse my writing to you, but could you tell me which hospital I could see you at, or the lowest fee you accept. My poor brother came to see you but it cost him £2 2*s.* I could not possibly pay that as I do not possess it. I am suffering something awful with my head particularly when the menses are on. I am a married woman with three children. My husband is a carpenter. I have already undergone an operation for gall-stones, and I pray to God to be able to see you. If only you could tell me this dizziness is due to my liver it would put a new lease on my life. I don't want to see anyone but yourself. After what you said of my brother, I have faith in your very name. I have a bald patch on the left side of my head and it seems as if my head is always in a vice, and it affects my eyes. Four years ago next month, my brother came to see you on a Monday, and died on Friday 6 o'clock in the same week. Hoping and praying you will see me. Thanking you in anticipation. I remain, yours faithfully,

A. B.

PUBLIC HEALTH IN SEYCHELLES.

Mr. J. L. Devaux, Administrator, reports that the population of the colony on Dec. 31st, 1924, was estimated at 25,847, an increase of 1324 since the census of 1921. There were 178 marriages during the year, or 70 more than in 1923. The births number 723, corresponding to a rate of 29·97 per 1000. The deaths totalled 378, or 14·62 per 1000. The estimated number of square miles comprised in the Seychelles islands and dependencies is 156¼. Mahé is the largest and most populous island and is distant from Mauritius 934, from Madagascar 600, and from Zanzibar 970 miles. It is mountainous, fertile, and has an area of about 55 square miles. The climate is quite healthy, and, owing to the absence of the anopheline mosquito, malaria does not occur. The maximum shade temperature rarely exceeds 86°, but even at night the temperature seldom falls below 74°. The rainfall averages about 90 inches, although in some years it has reached 115 inches.

Corrigendum.—In the discussion on the Management of Contracted Pelvis at the Harveian Society (THE LANCET, Nov. 13th, p. 1010), Dr. G. de Bec Turtle should have been reported as saying that Walcher's position was of some value in increasing the size of the *inlet* in cases of flat pelvis, and that in the high forceps operation it was best to remove the instruments after bringing the head down *into the pelvic cavity.*

THE

Lloyd Roberts Memorial Lecture

ON

RACIAL DEGENERATION.

Delivered before the Royal College of Physicians of London on Nov. 19th, 1926,

BY THE VERY REV. W. R. INGE, C.V.O., D.D.,
DEAN OF ST. PAUL'S.

THIS is the second time in one year that I have been honoured by being appointed to give a lecture to the medical profession and their friends. I have accepted, because those who invited me must know my limitations, and will not expect from me what I am obviously incompetent to give. In my Fison lecture at Guy's, a few months ago, I spoke of the philosophy of science, of the relation of philosophy, particularly the philosophy of religion, to science. Though my treatment of the subject was necessarily cursory, I could not give a second address on the same topic, especially as my lecture has been published; and so I have decided to take as my subject to-day one aspect of a branch of science in which I have been keenly interested for many years, ever since, as a near neighbour of Sir Francis Galton in Rutland Gate, I learned from that fine old man to feel some of his own enthusiasm about the possible improvement of the human stock. For me it has, of course, been a hobby rather than a rigorous study, and I should not dream of supposing that any utterances of mine on these abstruse and difficult studies can have any value as contributions to knowledge. They will deal rather with the borderland between strict science and practical social hygiene. Politics ought to be a branch of social hygiene, though at present social hygiene is hardly even a branch of politics. *Salus populi suprema lex*, as the proverb says; and we may give *salus* its commonest meaning of bodily and mental health. *Sanitas sanitatum, omnia sanitas*, is Disraeli's parody of Ecclesiastes. The subject of racial decadence is one of supreme public interest; and though I wish I were better equipped with technical knowledge, I hope I may be able to state the problem in such a way as to interest some of you.

NEGATIVE EUGENICS.

I have taken the negative side of eugenics rather than the positive, racial degeneration rather than race improvement, not because I have any natural tendency to dwell on the dark side of the changes which are always going on in the human race, but because at present negative eugenics is far more important than positive. We have to consider whether we can counteract the dysgenic effects of a highly artificial civilisation. Natural selection, in a humane and highly civilised country like our own, has almost ceased to operate; if we do not provide some rational substitute for it, Nature will punish us for interfering with her methods of social hygiene without providing anything to take their place. But I hope to give some striking examples of the inheritance of good as well as of bad characteristics.

"To understand what has happened, and even what will happen," said Buffon, "it is only necessary to examine what is happening." But when *ce qui arrive* is what we want to know, that which has happened is our best guide. All science is based on the belief that in natural laws "there is neither variableness nor shadow of turning." This does not exclude what Bergson calls creative evolution, Lloyd Morgan "emergent evolution," and chemists creative synthesis, though in this process there is an unexplained mystery. Biological progress means increasing complexity of structure and function, increasing specialisation and coöperation of parts; and what we call human progress is no more than this. Specialisation always means limitation in some directions. We cannot have both wings and arms (until we become angels); if our limbs are good for running we cannot swim like a fish. Highly differentiated organisms are fit only for certain conditions; when these are changed the organism must perish or return to a less differentiated type. It is only the least differentiated organisms, like the germ-cells, which are potentially immortal.

So there are different paths which evolution may take. In our species we may say that there have been three stages—greater complexity of bodily structure, greater intelligence, and greater social organisation; and it is broadly true that when a new stage begins, the earlier stage becomes less active. If we judge from other living organisms on the earth, stability seems to be the rule, change the exception; though De Vries thinks that periods of mutation and of stability alternate with each other. It is probable that the four ice-ages, divided by long inter-glacial periods, have had a great deal to do with the evolution of humanity. Perhaps Nature has expended nearly all her ingenuity; there have been no new classes since the appearance of mammals and birds in very early times.

Even social evolution seems to have come to an end with the bees and ants. State-socialism can no further go than in these suffragette utopias, governed and run by maiden aunts. These societies are an awful warning; perfect coöperation has sacrificed the individual completely. Fortunately, there are physiological limits to specialisation; men consisting almost entirely of swelled heads, like H. G. Wells's "Grand Lunar," could not live.

Man has been a distinct species for probably more than a million years, but anything like civilisation is a matter of the last ten thousand years or so. This is a very short time for him to adapt himself to revolutionary changes in his habits; we need not wonder that what Metchnikoff calls maladaptations or disharmonies, bodily as well as mental, exist to plague us in our health and conduct. I suppose that pathology is mainly concerned with such disharmonies; it is instructive to observe how very small a part disease plays in the lives of wild animals, which are completely adjusted to their environment.

It is sometimes said that evolution is rapid to start with, when some climatic or other change sets it going, and that it then slows down till it stops. But it seems doubtful whether physical changes are not now going on in our bodily structure as rapidly as ever; only unfortunately they seem to be mainly degenerative. H. F. Osborn enumerates the decreasing size of the little toe, increase in the size of the great toe; decrease in the size and strength of the teeth, and probably a gradual lowering of the perfection of the sense-organs. Dentists, I believe, agree that our jaws are becoming too small for our teeth; the sharp and narrow nose of the northern European may be a new feature, with some value as a protection against respiratory diseases; baldness in middle life is perhaps increasing; and something seems to be happening to that now useless organ the appendix. I believe additions might be made to this list. As regards the organs of sense, I cannot help thinking that our eyesight has deteriorated rapidly. Very few middle-aged men can read a closely written or printed mediæval book without glasses; though the ancient Greeks, a singularly long-lived race, went on reading and writing till extreme old age without mechanical aid.

Any physical changes other than degenerative are inhibited by the use of tools and other inventions. Digestion as well as mastication is made too easy; having clothes and weapons we need neither fur nor claws. And, as I shall show, nearly all the aptitudes which distinguish the handyman from the simpleton are now becoming superfluous. We may some day have a generation who can neither walk nor write; they will rely on the cycle or car for the first, and on the typewriter for the second. "You press the button; we do the rest." Nature will say, "Very

well, I will leave you just enough intelligence to press the button."

HAS HUMAN INTELLIGENCE ADVANCED?

It seems very doubtful whether human intelligence has advanced in the last five thousand years. Look at the Egyptians 3000 years before Christ. "Already," says Austin Freeman, "he is living in large and well-ordered communities with all the machinery of a complex civilisation. He has an established government, a system of jurisprudence, a complex religion, and a wealth of myths and traditions. Though unacquainted with iron, he is an expert metallurgist as to the less refractory metals, with the aid of which he works—and works magnificently—granite, porphyry, syenite, and other of the hardest stones. Not only can he smelt metal, he can work it in every way; draw it into wire, beat it into sheets, cast it, emboss, chase, engrave, and even inlay and enamel it. He has invented the lathe and the potter's wheel, and can make, glaze, and enamel beautiful earthenware. He is an expert woodworker, joiner, and carver. He is an admirable sculptor, draughtsman, and painter. He has developed a great architectural style, and his stone buildings are not only the greatest in size ever erected, but are of unsurpassed excellence of workmanship. He is a builder of sea-going ships of considerable burthen and is a capable coastwise navigator. He has invented the loom, and produces textiles of fine quality. He has a rich language, and has devised a system of written characters, the handsomest ever produced, with a convenient and practical cursive script. He makes excellent paper, and has an extensive, dignified, and beautiful literature. He has numerous musical instruments, including the harp, lute, viol, drum, sistrum, cithern, dulcimer, flute, recorder, trumpet. He has established something approaching a metal currency; has a number of weapons—sword, spear, bow and arrow, sling, boomerang; and has invented most of the hand-tools now in use. He has domesticated the ox, sheep, goat, horse, camel, dog, cat, pig, and various birds, and is an expert agriculturist. He makes furniture of unsurpassed excellence of design and workmanship, and can cut and polish precious stones and set them in beautiful jewellery—in short, he is already acquainted with the essentials of all the arts and crafts, and in many of them he is to this day unexcelled if not unequalled."

I will not go so far as Sir Francis Galton in estimating the comparative intelligence of the ancient Athenian and the modern European; but there can be little doubt that the Greek was our superior. All the great religions, and I think all the great philosophies too, were born in the thousand or twelve hundred years before the death of Mohammed.

Civilisation is mainly the result of accumulated knowledge and experience. Each generation stands on the shoulders of the last, and has the chance of climbing higher from that point. Most of our acquisitions are in the custody of a very few persons. Some of them are trade secrets; others can only be mastered by many years of application. This explains how civilisations occasionally die; it is also an argument for a widely diffused education. A great convulsion, like the breach of the dykes which protected the Græco-Roman world from the barbarians of the north and east, may break the tradition, and cause the total loss of the higher arts and sciences. It is well known that at the Renaissance it was necessary to go back to the fragments which had survived from classical antiquity. In medicine, for example, Celsus and Galen were far in advance of the superstitious and ignorant practice of the Dark Ages. It is unlikely, but not inconceivable, that such a disaster may occur again. In Russia the nation has been almost literally decapitated. When that nation recovers a civilised government, it will have to go to Germany and other countries for the arts and sciences which have been almost extinguished at home. A world-wide revolution of the same kind, such as might follow another great war, would be the end of our civilisation, and the beginning of a new Dark Age which might last for centuries. It might then be found that the present population of the world is less inventive and alert in intelligence than, for example, the Europeans of the Renaissance.

Analogy suggests that where the weight of sustaining civilisation is thrown upon tradition, other faculties, by which man slowly raised himself from savagery, are likely to become partially atrophied. Whether such atrophy can be inherited is, of course, a vexed question among biologists into which I, as an outsider, shall be wise not to enter. The problem is mainly about the manner of the changes conditioned by environment, for there is no doubt that a whale has lost its hind legs by living in the water. (Milton gives the whale gills and a trunk, but he was a poet.) But it cannot be disputed that those qualities which were once essential to progress have no longer the same survival value under civilisations of the modern type. An American eugenist, Holmes of California, sums up the differences between barbarism and civilisation as follows. Among primitive races, natural selection operates actively. Nomads are obliged to leave diseased and feeble members of the tribe behind on their long marches. Superstitious fear causes deformed children to be destroyed. Sexual selection frequently works for race improvement. The African chief, who monopolises half the women of the tribe and is the father of his people in the most literal sense, is usually a man of gigantic stature and strength, and of great vigour of character. Among the Chippewa Indians any one may challenge another to wrestle, and if he wins may carry off his wife as a prize. Savage war tends to an increase of the best stock, since the better fighter kills the worse. This I think is somewhat doubtful. "He who fights and runs away may live to fight another day." On the other hand, among civilised races, natural selection is reduced in some cases, and probably increased in others. In the upper and middle classes marriage is not universal, and though many of the best men and women unfortunately die childless, there is a certain selection against men who cannot make good as salary-earners, and against women who are not likely to make satisfactory mothers. But meanwhile, the State, and private charity, keep alive multitudes who by their misfortune or fault are life-long parasites on the community, and who in many cases are suffering from heritable defects. This dysgenic selection affects a much larger number than the slightly eugenic selection among the well-to-do. Civilised war, says Holmes, eliminates the best. *Immer der Krieg verschlingt die Besten.* This is true, in so far as the unfit are not called to the colours. Such evidence as is available goes to show that considerable injury has been done to the European racial stocks by the Great War. Lastly, in place of the greater fecundity of the barbarian chiefs, the socially successful in civilised countries do not keep up their numbers. Against this it may be said that Plutus is blind, and does not always enrich the best, and that the children and grandchildren of the nouveau riche are not always better specimens of humanity than their poorer neighbours. But on the whole there is no doubt at all that industrial civilisation under a democracy skims off the cream in each generation and then throws much of it away.

The bees and ants have proceeded by extreme differentiation of function. The group has superseded the individual. Is this a desirable ideal for humanity? In some societies a highly cultivated minority has flourished and produced achievements which are the wonder of posterity, but the remainder of the population has remained quite uncivilised and uncared for. There have been biologists who accept this type of state as the best. Herbert Spencer thought that the "beneficent working of the survival of the fittest" must condemn the unsuccessful to "abject misery" and death. "An opposite régime would be fatal to the species." Haeckel says: "The theory of selection teaches us in human life exactly as in animal and plant life, that at each space and

time only a small privileged minority can continue to exist and flourish; the great mass must starve and more or less prematurely perish in misery. We may mourn this tragic fact, but we cannot deny or alter it. Many are called but few are chosen. This selection, this picking out of the chosen, is necessarily combined with the languishing and perishing of the remaining majority." Benjamin Kidd thinks that cut-throat competition "results from deep-seated physiological causes, the operation of which we must always remain powerless to escape." He adds that it is the lofty function of religion to furnish non-rational sanctions for conduct which make for social as opposed to individual welfare.

These sentiments are not likely to commend either biology or religion to those who used to be called the suffering and toiling masses. They represent a path which a nation might take, but, as I believe, to its own undoing. There are several fatal objections to it. Unlimited competition exhausts the competitors, physically and mentally, and in practice, whether voluntarily or involuntarily, it sterilises them. So severe is competition in America that 1,750,000 policy-holders of an insurance company (industrial department) give an average life of 46 years to males and 52 to females. Further, they will either destroy each other or cease to compete. In all the higher human activities competition is not the chief motive force, and in a nation organised solely for big business these higher activities languish. They are squeezed out, as we see in some sections of American society. The millionaire is not the supreme product of human progress. Again, as the result of our industrial régime, there has come about a correlation between failure and fecundity which is an odd comment on Herbert Spencer's beneficent law of the survival of the fittest. Lastly, the most important unit in group competition is the nation, and a nation organised on Haeckel's lines would go to pieces under the first severe strain, as Russia did in the Great War. Or if a privileged military caste made conquests, Nature's law is that the ruling race rules itself out. In Western Europe there are no more wolves; but the sheep hold their own. In short, I do not think that those who wish to keep the masses in a servile state (if there are any such left) can appeal successfully to biology in support of their views. A society with well-marked castes may be very successful, partly because, while encouraging good traditions of skill and requiring a considerable amount of specialisation, it mitigates competition; but not if it includes an ignorant and wretched proletariat. No scheme of social hygiene can be satisfactory that does not include the whole population. The plan of developing to the utmost a small selected class has been tried several times, but it is not proved that equally good results might not have been obtained by other methods involving less injustice.

Social Science and Environment.

We have now to consider whether civilisation is working towards a degeneration of the national stock. We may ask first whether neglect of the known laws of heredity is producing this effect, and, secondly, whether our social arrangements are encouraging the tendency to parasitism, which is always ready to show itself where circumstances are favourable to it. We shall have to consider not only the parasitism of persons or classes on the community, but the new danger that human beings may become parasitic on the machines which they have made for their own use. This last is a source of racial decay which has only lately attracted attention. It is obviously a problem which belongs to the human race alone, since man is the only tool-maker.

It will be generally admitted that our social science has been too exclusively environmental. It is not necessary to minimise what can be done by external means, such as education, sanitation, and increased opportunities for leading a healthy life. Sometimes diseases which were supposed to be hereditary can be eliminated by scientific treatment, as the Swiss valleys have been almost freed from goitre, which was already prevalent there in the time of Juvenal, since that disease has been proved to be due to the absence of iodine; and the supposed congenital inferiority of the inhabitants of subtropical regions in America has been proved to be due to the parasite called the hookworm. It used to be supposed that Europeans were constitutionally unable to keep their health in a tropical climate. But it now seems that in the absence of tropical diseases, such as malaria and yellow fever, which are being brought under control by war against the parasites which cause them, even northern Europeans can live healthily in climates as hot as North Queensland. Still, when all has been said in favour of concentrating attention on the environment, the best authorities are unanimous that Nature is far more important than nurture. Prof. Punnett, for example, says that "permanent progress is a question of breeding rather than of pedagogics; a matter of gametes not of training. As our knowledge of heredity clears and the mists of superstition are dispelled, there grows upon us with an ever-increasing and relentless force the conviction that the creature is not made but born." It is surely significant that these judgments, which go beyond what the observation of life suggests to those who are not specialists in genetics, are maintained so strongly by those who have given their lives to this particular study. There is not much difference, I think, here between the Mendelians and the biometricians, who sometimes show a certain acerbity in criticising each other. Prof. Karl Pearson, the most prominent authority on the statistical study of genetics, comes to the conclusion that if we compare the relative importance of Nature and nurture in determining bodily and mental character, it is found that Nature is at least five times, and perhaps even ten times, more decisive than nurture.

It is true that the transmission of characters is now seen to be far more complex than was once supposed. It is usual now to speak of unit-factors, not of unit-characters. A character, such as marked ability in any direction, is probably due to the combination of several unit-factors, the absence of one of which may spoil the result. No one would claim that much is yet known for certain about the action of "genes" and the laws of their combined action. I could not think of offering any opinion on so abstruse a subject. But we may still learn much by collecting family histories, and observing what qualities tend to reappear in the second and succeeding generations, without even attempting to theorise on the causes of their transmission.

Pedigrees of able families are abundant, ever since Galton inaugurated this method of approach. I think, if I may venture on an opinion, that Galton hardly allowed sufficiently for the good start which the son of an able man has, the stimulating influence of the home circle in which he is brought up, the ambition of following in his father's footsteps, the opportunities of a good education which his father's success affords him, and in some professions, such as politics, the openings which the son of a Cabinet Minister may expect for entering public life, at an age when the member of a politically unknown family is still struggling on the lower rungs of the ladder. We shall also find, if we read the literature of the subject, that a small number of striking pedigrees, such as those of the Bachs, a family of able musicians, and of the Darwins in our own country, are repeated in almost every volume. We need a much larger number of pedigrees, including not only the five-talent but the two-talent men. There are, however, some characters, such as stature and longevity, in which adventitious advantages count for little. The inheritance of such characters is probably more instructive when we are investigating the incidence of heredity than the history of families of great distinction. There is much material of this kind in the valuable but unfortunately very expensive periodical, *Biometrika*. Davenport gives some striking examples of the inheritance of stature and longevity,

which indeed we must have all observed. Insurance companies, it is well known, ask particularly about the ages at which the applicant's four grandparents died. In one American family mentioned by Davenport, the father died at 91, the mother at 82. There were 17 children, of whom the shortest lived died at 67. The inheritance of high stature cannot have escaped our notice. It would be quite easy to breed a family with an average height of over six feet by selected matings.

Mendel's discoveries have perhaps affected Galton's law of "reversion to the mean." Such reversion usually takes place, but if matings were selected with a view to preserving some particular character, I see no reason why it should not be firmly established. There is no tendency to breed out a degenerative variation which has once appeared, unless it kills off its victims.

HEREDITARY ABILITY.

Are some kinds of ability more strongly inherited than others? I believe myself that no kind of ability is more strongly inherited than that which leads to academic distinction in "humane letters," but that mathematical talent is comparatively sporadic. In classical scholarship the record of such families as Butler, Kennedy, Sidgwick is very remarkable. I gave in one of my books the history of my own mother's family, the Churtons. The first scholar of the family, my great-grandfather, was something of a freak, since his father was one of the old yeoman farmers, cultivating his own land. But as usual, for better or worse, the freak was persistent. In four generations no male of the family who lived to grow up failed to win more or less distinction as a scholar or theologian or both. There are 13 names in the list. Such records give point to the question of St. Paul, "What hast thou that thou didst not receive? But if thou didst receive it, why dost thou glory as if thou hadst not received it?" It would be a great comfort if we could apply the same argument to our faults. There are some professional families much more distinguished than mine, such as the Wordsworths, Selwyns, and Pollocks, whose history would be well worth tracing in detail. In fact, I believe that if, say, a thousand professional families would draw up records of this kind, it would have a real scientific value. I have suggested to the Eugenics Society that they might announce their willingness to receive family histories.

A very important question, especially as bearing on the subject of this lecture, is whether the professional classes have really a much higher average of innate ability than what, without meaning any offence, we may still call the lower middle and lower social strata. Political prejudices ought not to be allowed to interfere with a purely scientific question. The best discussion of the subject that I know of is in McDougall's "National Welfare and Decay." McDougall, who is now professor of psychology at Harvard, has a reputation second to none as an authority on social psychology. He considers that for the British people at the present time the topic of racial deterioration "overshadows and dwarfs every other that any man of science could propose for its consideration." "Both these great nations" (Britain and America) "are threatened by an insidious danger which, if we cannot learn to cope with it, will bring our brightest hopes to nothingness, and render our ideals merely the fleeting visions of a golden age which is past." The Great War has taught us that civilisation and culture do not necessarily sap the energies of man; this is a most reassuring discovery. Our future is in our own hands to make or mar. History seems to show that in the rise and fall of peoples economic factors are of secondary importance; no advantages will save a people from decay when it loses its natural superiority. Nations do not grow old like individuals; that is a false analogy; but they do die of disease, when the burden of civilisation becomes too heavy for the shoulders which have to bear it. This is why the present situation is so serious. The higher races and classes are using the resources of scientific knowledge to reduce the death-rate of the inferior and the birth-rate of the superior. In the United States a competent investigator says, "All available data combine to prove that the Anglo-American population has not merely attained its maximum, but has begun to decline." Prof. Karl Pearson, whom no one will accuse of being a Tory, says:—

> The upper middle classes are the result of a severe selection of capacity, and later, of intermarrying, under conditions which seem no longer possible. . . . It is the realisation of these points, that not all, but the bulk of the abler and more capable stocks have drifted into the upper middle class, and that ability is inherited, which makes, in my opinion, the decreasing relative fertility of these classes a matter of the most serious national importance.

This was written as early as 1905. In view of the financial burdens heaped upon the professional class since the war, it is certain that the situation has become very much worse. If you will take the trouble to open "Who's Who" at random, and count the number of children in 50 or 100 consecutive entries you will find that they are slightly less than two to each entry; so that these families of moderately successful men are not keeping up their numbers.

But have we any direct evidence that the children of the upper middle class are better endowed by nature than the other strata which, as we have seen, are crowding them out of existence? I will give two quotations from McDougall's book:—

> "Some years before the war, one of my pupils at Oxford made a direct attack upon the problem, and the results are significant, though on a small scale. At Oxford are gathered as teachers many men from the whole British Empire, highly selected in virtue of intellectual distinction. Now it so happens that in a certain private school in Oxford a majority of the boys are sons of these men. We therefore set out to compare the intellectual capacity of the boys of this school with that of boys of a primary school. This primary school was an exceptionally good school of its kind, the teaching being in many respects better than in the other, the private school; the boys were from good homes, sons of good plain citizens—shopkeepers, skilled artisans, and so forth—and there was no question of their development having been retarded by physical privations. Without going into detail, I may say summarily that the result was to show a very marked superiority in the boys of the school frequented by the intellectual class. The result is all the more striking if you reflect on the following facts: first, every boy has two parents and inherits his qualities from both. Secondly, it has not been shown that university dons prefer clever wives, or that they are particularly clever in choosing clever wives. It is highly probable that if the wives were all as clever as their husbands, the superiority of their sons would have been even more marked."

My other quotation concerns America.

> "Mr. A. W. Kornhauser examined 1000 children, drawn from five schools of the city of Pittsburgh. Of these schools, A and B were attended chiefly by the children of the poorer classes, largely unskilled manual workers; C and D by children of a more prosperous class, largely skilled artisans and small shopkeepers; E by children of parents in very comfortable circumstances. He found that the groups from A and B show a very large proportion of retarded, with an almost negligible number of advanced; C and D have the most nearly normal proportion of retarded and advanced; the E group shows a very small proportion of retarded, with a comparatively large percentage of advanced pupils. If the several schools had had the same standard of grading, the superiority of intelligence in the children of E over the others would be revealed even more strikingly. The figures are—in A, retarded 45·2 per cent., normal 47·1 per cent., advanced 7·7 per cent. In E 12·7 per cent. retarded, 62·7 per cent. normal, 24·6 per cent. advanced."

McDougall considers it proved that "the social stratification which exists in modern industrial communities is positively correlated with a corresponding stratification of moral and intellectual quality, or in less technical language, the upper social strata as compared with the lower contain a larger proportion of persons of superior natural endowments." He goes on:—

> "Forms of organisation matter little, the all-important thing is the quality of the matter to be organised, the quality of the human beings that are the stuff of our nations and

societies. . . . Civilisations decay because they die off at the top, because they cease to produce in sufficient numbers, men and women of the moral and intellectual calibre needed for their support. . . . The number of such persons is becoming absolutely fewer with each generation; the evidence is overwhelming."

I should not myself be quite so dogmatic as this last sentence; the question is too difficult to answer confidently. But several modern tendencies are actively dysgenic. The relative sterility of the professional class is a new thing. The sharp decline in the infant mortality of the slums is a new thing; the educational system whereby in each generation the cream of working-class ability is skimmed off and drafted into the infertile black-coat professions, is new; the feminist movement, which according to some is the most dangerous of all, by making the most intellectual women disinclined to marriage and motherhood, is new. The extent of the evil may be and has been very variously estimated; but beyond all question the classes which are the best endowed intellectually (and, in this country, the best endowed physically as well) are passing into a relative and even an absolute decline. At Oxford, McDougall found that 142 dons had 261 children—284 parents, 261 children. Taking the country as a whole, though the figures are somewhat contradictory, the lowest birth-rates seem to be those of the medical profession, the teachers, and ministers of religion. My present audience will probably agree that no more desirable parents of the next generation can be found than the members of these three professions. It may also suggest food for reflection that these three professions are the chief denouncers of birth control. We have seen what our leading authorities on Mendelism and Biometrics think of the immense importance of preserving the best stocks and repressing the increase of the worst. There is therefore grave reason for apprehension at the course which our civilisation is taking.

Before leaving the subject of good heredity, and passing to the darker side of my theme, I should like to call your attention to one of the most remarkable examples of the way in which a country may be permanently enriched by a very small accession of picked immigrants. To judge from the claims of some prosperous Americans, one might suppose that the *Mayflower* was as large as the *Olympic*. In point of fact, it was a very small vessel, and the mortality among the Pilgrim Fathers was so great that only 33 of them founded families. Nearly half the great men of America are the authentic descendants of these 33 men. Here is the list, as furnished to the last Congress of Eugenics :—

John Adams, President; John Quincey Adams, President; C. F. Adams, Ambassador to Great Britain; H. Dearborn, Secretary for War; Garfield, President; Ulysses Grant, President; L. P. Morton, Vice-President; Elihu Root, Secretary of State; A. Taft, Attorney General; W. H. Taft, President; Zachary Taylor, President; E. B. Washburn, Secretary of State; Daniel Webster, Secretary of State; L. Wood, Governor of Cuba and the Philippines; Lord Lyndhurst, Lord Chancellor of England; M. W. Fuller, Judge of the Supreme Court; W. C. Bryant, Poet; W. Churchill, Novelist; R. W. Emerson, Philosopher; H. W. Longfellow, Poet; with many other names less well known on this side.

IMPAIRMENT OF THE NATIONAL STOCK.

I now come to the injury which is being done to the national stock by the unchecked propagation of inherently bad stocks. A combination of socialism in distribution with laissez faire in procreation is a policy only fit for Bedlam. The importance of prenatal infection is often exaggerated, partly for moral reasons. I once asked Sir Conan Doyle whether as a doctor he could justify the plot of his lurid story, "Unto the Fourth Generation," and he admitted that he could not. It seems very doubtful, in spite of the researches of my friend Dr. Mjoën, of Norway, whether alcohol injures the germ-plasm. Sir Archdall Reid even suggests that after a century or two of prohibition a nation would be in an admirable state for general alcohol poisoning; the effects of immunisation would by that time have worn off. The danger to the stock comes from those diseases which when they have once appeared in a family, Mendelise, and are never bred out of it, though the curious law of "antedating," which seems to be established in some cases, looks like an attempt of nature to cut off the tainted entail.

I will take first the case of mental defect. The feeble-minded are about 50 per cent. more prolific than the normal. The researches of Tredgold are decisive on this point. Where two feeble-minded persons marry, the children are all tainted. Pedigrees may be found in Tredgold, Whetham, Davenport, and many other writers. In one family tree, planted by two defectives, there are 14 names, none of them normal. Holmes says :—

"Out of 482 children recorded by Goddard as arising from unions between two feeble-minded persons, 477 were known to be defective. . . . In 41 such matings of the 'Kallikak' family, there were 222 feeble-minded and only 2 normal."

Where one parent is epileptic and the other feeble-minded, Davenport and Weeks found that in 15 matings, 28 out of 55 children were epileptic, 26 feeble-minded, and 1 insane.

Insanity is, of course, a word which covers many diseases, and I am not suggesting that all insanity is degenerative. But it is ominous that—

"in 13 years before 1903 the insane in institutions in the United States increased 100 per cent., and that since 1859 in England and Wales the insane have increased 230 per cent." (Holmes).

These figures do not include the mentally deficient, who have multiplied as we should expect.

It is not generally known that though the death-rate has declined rapidly and steadily till it must have almost touched bottom, the saving has been entirely in the earlier periods of life. The expectation of life at 60 is, I believe, no higher than it was 70 years ago. Some microbes seem to be in process of establishing a *modus vivendi* instead of a *modus moriendi* with their hosts, but cancer begins after 45 to levy a cruel toll upon both sexes, and now nearly equally, though it was formerly more fatal to women in the proportion of 5 to 2.

Some of the most striking instances of heredity in disease are in somewhat rare ailments, which have not very much racial importance. The incidence of albinism is so curious that it probably results from a combination of two or more factors. In one family there were 19 albinos out of 75 in four generations; but it seldom appears so frequently as this. Night-blindness and colour-blindness are both, it seems, inherited with a greater intensity than can be accounted for by Mendel's law. Two marriages between deaf mutes produced nine children, all deaf and dumb. A third marriage between two deaf mutes produced four children, all deaf and dumb; but one of them married another deaf mute, and had two normal children. Hæmophilia is usually supposed to be absolutely sex-linked; for which reason I should be interested to know why the Registrar-General passes, apparently without investigation, the attribution of a few deaths of females to this cause.

A more interesting question for most of us is whether the national physique is improving or deteriorating. A Danish savant proved at the last Eugenics Congress that the stature of Danes has risen very appreciably in 50 years, the figures being 165·42 cm. in 1852–56, and 169·11 cm. in 1904–05. The average height of the Dutch has risen from 165·5 cm. in 1866 to 168 in 1899. In France the average height of women is said to have risen 3 cm. in 80 years. The only English figures of the same kind that I know of are measurements at Marlborough College, which showed, in boys between 14 and 15, an increase from 61·4 inches in 1874–78, to 61·96 in 1899–1902.

It is difficult to reconcile these favourable statistics with an article published last year in the *English*

Review, giving very disquieting figures about our own country.

Grade A 1917–19.	Average.	Whole country 1883 (Anthropometric Committee of Brit. Assoc.).
Height, 66 in.	65·7	67·4
Chest, 34 ,, ...	32·5–33	36·4
Weight, 130 lb.	128·4	148·7

In boys of 18 the height is said to be less by 1·6 inches, the chest by 0·3, the weight by 11·6 lb. The same article states that in 1924 the Commissioners of Constabulary reported a general deterioration in the nation's physique. The chief constable is lucky if he finds five suitable men among a hundred applicants.

I should be much interested to know whether the facts in this article have been challenged. If they are true, they are, it seems to me, exceedingly serious, especially as our neighbours on the continent do not appear to be suffering in the same way. The decline is far too great to be attributed to malnutrition during the years of the war.

There is another way, besides dysgenic selection, in which the national stock may be impaired. Nature, we were told long ago, takes away organs which are not used. I suppose the statement is broadly true, whatever the method may be. The free-moving creature which becomes a parasite drops all its organs except those which enable it to hang on and suck. In one of the most interesting books of recent years, "Social Decay and Regeneration," by Austin Freeman, which I have already quoted, the thesis is maintained that the invention of the power-engine marked an epoch in the history of mankind. Ever since the growth of the machine age there has been a destruction of natural beauty, a reckless squandering of irreplaceable natural resources, and a progressive loss of all the exquisite works of skill wrought by the human hand. The old handicraftsman was in every way a superior and more civilised animal than the minder of machines. Machinery has transformed a skilled into an unskilled population. The modern workers are parasitic on the machine which has ousted them from natural human occupations; apart from the machine they would be helpless even in the presence of abundant material; a company of such men, left to themselves, would either perish or exist miserably as savages. Together with this disastrous change we see the growth of anti-social movements; we see hatred of civilisation itself; we see whole classes banded against society, and determining to be parasitic upon it; we see increasing multitudes accept permanently the position of pure parasites—dole-receivers; we see the industrious producers harassed and plundered more severely every year. This picture is filled in with a great wealth of detail. The indictment is very difficult to rebut; and the diagnosis is the more grave because the disease seems to be constitutional, the inevitable result of changes which could not be resisted. Society may become like the majestic sunfish—its scales covered with lice, its intestines one tangled mass of tapeworms, its eyes pierced by trematodes, no organ of its body free from swarming masses of parasites. And it may not be easy to recall the parasites to healthy social habits. *Facilis descensus Averni ... sed revocare gradum ... hoc opus, hic labor est.*

CONCLUSION.

Nevertheless, I am inclined to think that it is not too late to stop the mischief, which has not yet had time to go very far. We must hope that social antitoxins will somehow be generated, and that we shall not steer the ship upon the rocks with our eyes open. We are not yet a degenerate people; we are a race to which any man might be proud to belong. But we are not at present in a healthy condition, and unless we take the problem of racial decay in hand promptly it may be too late. I only wish I had more practical suggestions to offer. Mr. Austin Freeman attempts some at the end of his book, but they seem to me very impracticable. All we can do at present, I think, is to persuade our countrymen what the pressing problems really are. They are so very different to those in which our precious politicians interest themselves.

The great medical societies can do much, if they will speak out. I do not think they quite realise how glad the public would be to listen to them. The modern man may deny that he has a soul, and forget that he has a mind; but he is acutely conscious that he has a body, and therefore he has a great respect for the doctors. I wish they would testify, for I nearly always agree with them.

TWO PAPERS ON

BRONCHIECTASIS:

RECENT ADVANCES IN TREATMENT AND DIAGNOSIS.*

I.—FROM THE MEDICAL ASPECT.

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BRONCHIECTASIS, if we may call it a disease, is certainly a very protean one; as varied, indeed, in its clinical manifestations and therapeutic demands as is pulmonary tuberculosis itself. This is understandable when one recognises that its essential quality—bronchial dilatation—is the end-product of a multitude of disease processes; that it may attack many or few bronchi, and these of various sizes; that it may be unilateral, or affect both sides of the chest; that the surrounding lung may be healthy, inflamed, or fibrosed; and also that the dilated tubes themselves may remain comparatively healthy, be subject only to catarrh, or may be the seat of a severe suppurative process. It is this last condition, bronchiectasis with suppuration, which I think we must have especially in mind in our discussion to-night, since it is here that diagnosis and treatment are in most urgent demand, and here, consequently, that new methods have arisen and demand our consideration.

For our present purpose, I think, cases of clinical bronchiectasis may be said to fall into two main groups: 1. The slighter cases, especially seen in childhood, mostly involving small bronchi or bronchioles, and with mild or intermittent symptoms. 2. The more serious cases, mostly found in adults, though frequently originating in childhood, where symptoms are continuous and severe (though often with intermissions at first), and where the condition finally amounts to a suppuration within the dilated and thickened tubes. A third place might be given, perhaps, to certain cases of lung suppuration where bronchiectasis is an accompaniment of abscess formation, the result, in most cases, of aspiration of a foreign body, generally broken tooth, wool plugs, or septic materials, during a tonsillectomy or tooth extraction. These cases of "bronchiectatic lung abscess," as they have been called, are so important in practice that they may well be included in our present discussion, since bronchiectasis is one of their features.

Now before I turn to the serious cases of bronchiectasis with suppuration, which I take to be our main thesis, I should like, if I may, to say a few words about the cases of slighter disease. As a physician attached to a children's hospital I am brought in contact with numbers of these cases, and my first interest in bronchiectasis was aroused by them to the extent of collecting and publishing a paper on 40 cases as long ago as 1905. Their importance lies in the fact that they are potentially serious, that their recognition and study may give the clue to adult chest disease, and that they help us to understand how bronchiectasis is brought into being. Often it is possible to detect dilatation of bronchioles

* Opening a discussion on Nov. 22nd before the Medical Society of London.

after an attack of broncho-pneumonia, and to watch the child through subsequent attacks into a condition where a permanent fibrosis and bronchiectasis is left at the lung bases, generally more marked on one side than the other. The symptoms of these cases, and the severe catarrhal attacks to which they are subject often, I think, where the structural changes are moderate, abate with growth, and hence a proportion of these cases drop out of view, and only the more serious ones carry their disability visibly into adult life. This accounts, I think, for the fact that these cases if looked for are observed more commonly in the first decade than at any subsequent period, though presenting for the most part much less serious symptoms. The slighter of them are mainly of importance in that their physical signs may form the basis for a mistaken diagnosis, and that they may appear in adult life, the childhood condition being forgotten, under such guises as basal bronchitis, purulent bronchitis, and broncho-pneumonia in the adult, or with such unexpected symptoms as blood-stained sputum, or even a frank hæmoptysis. This condition of "damaged lung" is generally basal in the broncho-pneumonic areas, but it may, rarely, follow an upper lobe pneumonia, generally on the right side, and is then very apt to be mistaken for pulmonary tuberculosis. How far modern methods, such as lipiodol, will come into use in the differential diagnosis of these slighter conditions it is difficult to say.

More serious examples of bronchiectasis, those indeed which mainly concern us to-night, may begin in childhood, and only become serious with the passage of time, or may arise in adult life from causes often somewhat obscure. On the one hand, they may arise from inflammatory conditions which weaken the bronchial wall as from bronchial suppuration, or influenzal congestion or pneumonia, a common cause in recent years. They may develop also as a result of pulmonary fibrosis. On the other hand, serious bronchiectasis may be due to bronchial obstruction, whether within, from foreign bodies, or strictures, congenital or syphilitic, or from pressure without by neoplasm, aneurysm, or diseased glands. Under all these circumstances the symptoms and severity of the case vary greatly with the following conditions: (1) the amount and nature of the bronchial dilatation; (2) the adequacy of drainage; and (3) the severity of the infection present in the deformed tubes. With regard to (1) and (2), it is obvious that, on the one hand, an area of dilated bronchioles will be of no great consequence unless as a nidus for catarrhal attacks, whereas a lobe riddled with thick-walled dependent cavities, insufficiently drained by a narrowed bronchus, is likely to prove a very different proposition. But it is the nature of the infective process which especially determines the course, whether serious or otherwise, of the case. Even with considerable bronchial dilatation a patient may be kept in comparative health and comfort for an almost indefinite period, providing no severe infection of the unhealthy area arises. Owing to imperfect drainage a condition of chronic catarrh is maintained, sputum is probably abundant, and if treatment is neglected, perhaps occasionally offensive, but health may be fairly maintained and the expectoration remain the patient's chief trouble. But replace this catarrhal condition with a severe suppurative process and the case enters a different category. Bronchial drainage may altogether fail to relieve, and surgical intervention appear necessary to treat what is, after all, a surgical disease, though invading the lung, one of the last strongholds of the physician.

Diagnosis.

In the diagnosis of bronchiectasis two recent advances claim special notice—namely, bronchoscopy and the injection into the bronchial tubes of substances, such as bismuth and iodine preparations, which are opaque to the X rays.

Bronchoscopy.—The increasing use of the bronchoscope in the differential diagnosis of bronchiectasis may be traced to the activities of the American school, notably to Chevalier Jackson. In the elimination of foreign body, or of stricture, or obstruction as a cause (with due care in the avoidance of its use in cases of aneurysm), and in the determination of the extent and location of the trouble, the patency of the affected bronchus, the presence of granulations, &c., this method becomes of increasing importance. Bronchoscopy has become in America a specialty apart from laryngology, due, no doubt, to that curious foreign-body-in-a-bronchus habit of the American people, and has reached a stage of skill where no more than a local anæsthetic to throat and epiglottis is generally needed for its use, even in childhood. W. F. Moore, of Philadelphia, treating 38 cases of bronchial suppuration by weekly aspiration and lavage, was able to record that, though no general anæsthetics were used, not one case refused to carry through the course of treatment.

Bismuth and Lipiodol, &c.—At the end of a bronchoscopic examination it has been the practice of Chevalier Jackson to insufflate bismuth and radiograph the chest. Where the bronchoscope is not in use the simplest plan is to inject 20 c.cm. of lipiodol through the crico-thyroid membrane following anæsthetisation of the trachea with some 5 per cent. cocaine. If a needle only three-quarters to one inch long is used, the warmed lipiodol is easily injected under hand pressure without the screw arrangement often recommended. The needle must be kept sharp or the tracheal mucous membrane may be pushed before it. At any rate, I have seen failure to reach the tracheal lumen and that seemed the only possible explanation. I shall not here deal with lipiodol in diagnosis since I know it will be adequately discussed by others. All I would like to insist on is the useful attention it is directing to the value of postural X ray examinations now fluid levels can be so easily followed, and also to the occasional value of the lateral, as opposed to the oblique radiogram in diagnosis. In addition, it is interesting that lipiodol shadowing is visible in some cases as long as four months after its introduction, and that Forestier, of Aix-les-Bains, holds that remedial effects follow its use in bronchiectasis. These are points for further investigation. It will be remembered that intratracheal injection, mainly of menthol and guaiacol in oil, formed a treatment of the past, but was not followed by any very striking results.

Conservative Treatment.

In the days when the chest was still the undisputed property of the physician, before ever the surgeon began to look in at the door, cases of bronchiectasis, treated on common sense lines, often did remarkably well, and they still continue to do so. But recently I have been shocked to see, in an article on the treatment of bronchiectasis by a distinguished surgeon, under the subheading Medical and Hygienic Therapy, the words "This is without effect." Evidently it is time for the physician to reassert himself! In practice one may say, I think, that the ordinary treatment used by physicians in the more recent past, if persisted in by the patient, gives adequate and satisfactory results in a majority of cases. It is well to recognise at the outset that the anatomical condition bronchiectasis, once established, is incurable, but that nevertheless good health may be maintained in many cases in spite of it. It must not be supposed that removal or elimination of the diseased area is necessary or possible except in a few cases, and the number suitable for surgical measures is really comparatively small. Even the surgeons, as a rule, display no undue enthusiasm. Hedblom, of Rochester, U.S.A., refers to these cases as "the most thankless task in surgery." Sauerbruch, who had operated on 69 cases up to 1920, says "The surgical treatment of bronchiectasis is the most difficult and thankless chapter in the whole of lung surgery." Evarts Graham, whose surgical work in bronchiectasis we shall mention later, finds that he operates on fewer and fewer cases; he was content to treat 24 of 40 cases in children by ordinary conservative measures. These measures must now be referred to.

Postural Drainage and Creosote Chamber.—Only two of them are of outstanding importance, and we may let the rest go by the board to-night. I refer to postural drainage, and the creosote chamber treatment introduced by Arnold Chaplin in 1895. With these two properly applied, where bronchial drainage is free, we can bring to clinical recovery and keep in comparative health the majority of cases of bronchiectasis, and that without danger to life. Unfortunately, human nature being what it is, it is very difficult to avoid relapses through neglect of treatment. Life, as we know too well, is apt to become as years advance "just one darned thing after another" and it is scarcely surprising, perhaps, that patients resent, and after a time neglect, any addition to the daily ritual. Other methods of treatment, including surgical measures, come into consideration only where postural treatment and creosote chamber fail or are inapplicable, or where the patient demands some release, even at danger to life, from the burden of a somewhat hampered existence. Then must we consider, one by one, the means which modern progress has prepared for us. Let us take a problematical patient and consider the lines on which we should deal with him.

Often we find our patient propped up in bed and overflowing with secretion like a full jug. He has avoided movements which bring on cough and so his secretion has accumulated. The first process will be to empty him out gradually till he can lie flat, and thereafter, as his condition allows, begin postural drainage in the knee-elbow position, and later over the side of the bed, and, presently, if the case appears to be an ordinary bronchiectasis, the creosote chamber. In the meanwhile radiograms will be obtained whereby we can ascertain where the trouble is situated, whether there is any question of neoplasm, aneurysm, foreign body, or abscess formation, what amount of fibrosis is present, and, if necessary, with the assistance of lipiodol, what is the nature of the bronchiectasis, and how far, if at all, it affects the opposite lung. For of 318 cases observed in the Rochester Clinic, U.S.A., 28 per cent. were bilateral, and in another 38 per cent. the condition of the second lung remained uncertain. Among 54 autopsies in bronchiectasis Lebert found 52 per cent. unilateral and 48 per cent. bilateral.

Now under postural drainage and creosote vapour in many cases the sputum will lose its offensive odour and much of its purulent character, and become greatly reduced in volume, the patient's toxic condition will clear up, and an extended trial of these measures will be indicated, especially if disease is bilateral. If, however, there is question of a foreign body or of abscess formation, or the symptoms date from an operation, especially a tooth extraction or tonsillectomy; if there is suspicion of bronchial obstruction other than aneurysm; or if drainage seems hampered and the sputum remains offensive, and general improvement is slow, then a bronchoscopic examination may help to clear up both diagnosis and treatment.

Bronchoscopic Treatment.—The bronchoscope in diagnosis we have already mentioned; it may also be helpful in treatment. Foreign bodies may be found and removed, foul pus evacuated by aspiration, strictures dilated and granulations cauterised. Weekly bronchoscopic aspiration, assisted in some cases by lavage and medical applications to the bronchial walls, has proved of value, especially if used early (T. McCrae)—it will not, of course, cure chronic bronchiectasis any more than will postural or any other form of drainage, but it will help to restore health. Nevertheless, among W. F. Moore's cases of bronchial suppuration so treated a third showed no improvement. "The unimproved class," he remarks, "was chiefly made up of patients with extensive bronchiectasis." Thus a proportion of cases will be left for the trial of other more radical measures.

More Radical Methods of Treatment.

These have for aim the development of one or more of the following principles: (1) Improvement of drainage. (2) Closure of suppurating cavities by collapse or compression of the surrounding lung. (3) Extirpation of the diseased area. These further measures are all, except external drainage, of modern development, and may be considered under the following headings: pneumotomy, artificial pneumothorax, phrenic exairesis, thoracoplasty, ligature of pulmonary artery, and lobectomy and cautery lobectomy.

Pneumotomy.—External drainage has been attempted in the past, and mostly abandoned for ordinary bronchiectasis since a single opening fails to drain multiple cavities, and may greatly interfere with the efficacy of cough in clearing the chest. Only where suppuration has gone on to softening and the formation of a single large sac, a bronchiectatic abscess, is open drainage likely to prove successful, and such an opening, unlike that for simple abscess, will not again heal spontaneously. Nevertheless, the improvement which follows in suitable cases may reconcile the patient to the inconvenience of an open fistula which at a later stage may require but a single dressing daily. Such a fistula can be closed at a later date, though this is, probably, seldom advisable, or further operative measures may be added. Sauerbruch, collecting the literature up to 1911, found 123 pneumotomies recorded with results: 33 per cent. cured, 6 per cent. improved, 27 per cent. unrelieved, and 25 per cent. dead. The results in the hands of different surgeons differed widely, probably according to the suitability of the material chosen for the operation, some achieving great success and others decidedly the reverse. It seems probable that a proportion of the successful cases were lung abscess rather than bronchiectasis, since little trouble has been taken in many quarters to differentiate between these two conditions. Clearly the success or otherwise of external drainage is bound up especially in the recognition of the suitable case.

Artificial Pneumothorax.—This treatment, whose purpose is the closure of the suppurating cavities by collapse or compression of the lung, can only come into consideration when disease is wholly or mainly unilateral, and even then it is open to certain serious difficulties.

1. When one considers the post-mortem appearances of the disease it is obvious that in a majority of the bad cases no real collapse of cavities is possible, and this is found to be the case in practice. Pneumothorax is best suited to certain post-pneumonic cases in developing stages—that is, in early life—since in these the smaller and thin-walled bronchi are at fault. It is but little applicable to the old advanced cases of adult life where the larger tubes are affected, and these are the very cases for which treatment is especially needed.

2. For the reason just given only a very complete collapse is likely to succeed and this is just what, in bronchiectasis, is very rarely attainable. Adhesions are generally numerous and strong, and Burrell records good collapse in but two among his 19 cases. Now the presence of these adhesions brings us to the third difficulty.

3. Are they not themselves evidence that a spread of infection to the pleura is common in these cases, and such a pleural infection occurring after the lung is collapsed means a pyopneumothorax of almost certainly fatal issue? This has happened in my own practice, and I have become very cautious of advising pneumothorax on this account. Still, the treatment is probably, in spite of this risk, the best that can be done in certain cases, especially in early life, and if complete collapse is attained the risk of pleural infection may be much diminished thereby. It must be remembered that pneumothorax treatment is in this disease only palliative, and that the cavities reopen if the lung is allowed to re-expand, though the suppurative process may by then be mitigated or suppressed. In gauging the effects of pneumothorax on the bronchiectatic area it is useful, as is well shown in some plates published by Burrell and Melville, to inject lipiodol into the lung before the pneumothorax is initiated.

Phrenic evulsion or exairesis has been used of recent years in the treatment of basal bronchiectasis. The paralysed diaphragm rises into the chest and the base of the lung collapses, the effect being especially pronounced where the right nerve is treated. It might be thought that expectoration would be thereby hindered, but in practice the opposite generally occurs. Thus among 40 cases operated on in the Sauerbruch Clinic, Lange found that in 23 expectoration was facilitated, in eight there was no change, and not one complained of difficulty. The explanations suggested by J. Alexander for this improved power of expectoration is that the abdominal muscles during cough can exercise a more direct propulsion on the lung through the paralysed diaphragm. Cases have been reported where phrenic evulsion has led to improvement in bronchiectasis, but personally I have not been impressed in the cases where I have tried it, nor can it be expected to accomplish very much.

Thoracoplasty.—Paravertebral thoracoplasty, performed with such success in selected cases of pulmonary tuberculosis, has proved much less valuable, as would be expected, in bronchiectasis. Here the thickening and stiffness of the bronchial walls, and often of the surrounding lung, prevents closure of the cavities even under pressure by a pneumothorax, and mere reduction of lung volume by thoracoplasty will effect even less. Among 27 cases of disease involving the whole of one lung operated on by Sauerbruch, none were cured and only five permanently benefited. There was only one death among these cases. On the other hand, he records better results in a further 11 cases where the trouble followed empyema and was confined to the lower lobe. More recently Hedblom has treated ten cases, with no death and with considerable improvement in most, by a more extensive but graded thoracoplasty confined to the lower part of the chest. The operation is done in four or five stages under local anæsthesia and the outcome is the removal of practically the whole of the fourth or fifth to eleventh ribs, beginning with the paravertebral region, continuing with the sternal ends, and finally removing the mesial portions. The collapse is thus rendered very complete, but his patients, he says, are up and out of bed two or three days after each operation; nor has he anything to say about "flapping" or "fluttering" of the mediastinum, which was so serious a feature of the extensive Brauer-Friedrich operation of old days. This is probably avoided by the multiple-stage procedure, but it is difficult to suppose that many patients in this country could be induced to undergo five resection operations under local anæsthesia. A thoracoplasty adequate to the improvement of bronchiectasis must necessarily be a severe operation, and personally I feel there are very few cases where it seems justified or necessary. I confess that I have always so far offered it to my patients in such guise that it has invariably been refused, and on each occasion I have felt definite relief at the outcome. A reduction of sputum, which can generally be achieved by other measures, seems hardly a sufficient reward for this operation, and the really septic cases are hardly fit subjects for it. In combination with other surgical measures, however, rib resections may prove of decided value.

Ligature of the pulmonary artery or its branches does not seem to be a very difficult operation apart from the presence of adhesions. Its effect is to cause a fibrosis and shrinkage of the lung or lobe, and this so marked that in some cases a subsequent rib resection has seemed advisable. It has also been done as a preliminary to lobectomy. It was performed by Sauerbruch in 14 cases of bronchiectasis with no favourable results, and with no obliteration of the cavities. This seems to me the logical outcome, since pulmonary fibrosis itself leads to bronchial dilatation. There seems no place for this operation by itself in the treatment of bronchiectasis.

Lobectomy and Cautery Lobectomy.—Extirpation of the diseased area makes a natural appeal to the surgical mind, and it was inevitable that attempts at this should be made in selected cases of bronchiectasis. Unfortunately, the mortality for lobectomy, 52 per cent. among the 48 reported cases, has proved too high to encourage its further use. Most of the deaths were due to infection of the raw surfaces exposed during the separation of the practically always adherent diseased lobe or lung. To avoid this risk, Evarts Graham, whose name is well known to us in connexion with diseases of the gall-bladder, has since 1923 been urging the piece-meal removal of the bronchiectatic areas by means of the actual cautery. This is no new operation—Sauerbruch, in 1920, records having performed it in nine case, in five with decided and two with slight benefit, and with two deaths. Graham's claim for it is the establishment of numerous bronchial fistulas for massive drainage, by opening the lung tissue over a wide surface; the compression of the diseased area by packing and bandaging; and eventually the removal of more and more lung up to extirpation of the bronchiectatic lobe. This method, he claims, "combines the three cardinal principles of the surgical treatment of chronic pulmonary suppuration—namely, drainage, compression, and extirpation." The ribs are resected over an area about 4 inches square, the parietal pleura is exposed by stripping off the periosteum with the muscles, vessels and nerves, the pleural surfaces are examined to see if they are adherent, and if not steps are taken to make them so. This is the first stage of the operation. A few days later cauterisation is begun with a large soldering-iron heated to redness; a wide cross section is destroyed, so that when the slough separates some 20 or 30 bronchial fistulas are seen exuding pus; no anæsthetic may be needed at this and subsequent stages. Drainage is assisted by the use of suction apparatus. After about three weeks a second cauterisation is made, and this is repeated at intervals till the diseased area is virtually destroyed, from one to seven or eight cauterisations being needed in different cases. Hæmorrhage is controlled by packing which Graham has found to suffice even when large branches of the pulmonary artery are opened. No shock follows these operations, but fever and malaise often appear on the third day and persist till the slough separates on the tenth to twelfth day. Eventually the bronchial fistulas heal, or if open are found to supply about the same secretion as will a normal nose.

The obvious dangers of this operation are *air embolism* and *hæmorrhage*. Air embolism is indeed a danger in all operations for bronchiectasis owing to the inability of cut veins to collapse in the thickened tissues. Sauerbruch has recommended differential pressure apparatus for its avoidance. No less than three of the four deaths among Graham's first 20 reported cases were from cerebral complications, and two of these were almost certainly air embolism. Among his latest figures cerebral embolism was responsible for four among seven deaths in 31 cases. Graham curiously enough had no serious cases of hæmorrhage, and none of post-operative hæmorrhage. On the other hand, Hedblom, among only four cases, experienced severe hæmorrhage in three, and two of these died of it, one on the seventh day during the changing of a packing. Graham remarks that hæmorrhage should be easy to control, since the pressure in the pulmonary artery is only 15–20 mm. Hg. If it proves severe he stops the operation, packs, and removes the pack on the third day, repacking if necessary.

Among the 31 cases operated on by Graham up to 1925 55 per cent. were reported well (36 per cent. still with open fistula), 13 per cent. markedly improved, 6·5 per cent. were recent cases and the results unknown, 22 per cent. (seven cases) were dead. On looking through the case-notes one is struck with the fact that the majority were cases of lung abscess and but few of simple chronic bronchiectasis. The method seems applicable for any localised area of suppuration within easy reach of the surface, but less so, it seems to me, in the ordinary basal bronchiectasis. When one considers how these elongated cavities abut on

the diaphragmatic surface it is difficult to see how the cautery can destroy them without considerable danger of wounding neighbouring structures, such as the diaphragm or the pericardium. It will be interesting to hear what our surgeons have to tell us about the technical possibilities of this operation in bronchiectasis.

Summary.

Our present position, then, with regard to the treatment of bronchiectasis may, in my opinion, be stated as follows:—

1. It is best, as a rule, to be satisfied with a moderate result—that is, with relief of dangerous symptoms such as can be accomplished in most cases by well-applied postural drainage and creosote chamber, assisted by drugs, and reinforced, if necessary, by bronchoscopic treatment. This applies especially to bilateral cases.

2. If these measures fail, something further may have to be tried, and its success will depend on the suitability of the method to the type of case. Thus (*a*) pneumotomy is suitable for single large suppurating cavities and for little else. (*b*) Phrenic exairesis may partly eliminate, and assist drainage in, a strictly basal lesion and is indicated for such. (*c*) Pneumothorax and thoracoplasty should be reserved for unilateral cases in which the lung and the cavities seem likely to be collapsible. (*d*) Lobectomy and cautery lobectomy can only be considered for well-localised areas of disease. The latter operation, however, seems materially to enlarge the scope of the older pneumotomy, and to offer external drainage at least to a much greater number of cases. Finally, it may be noted that under some conditions a combination of two or more methods may best meet individual needs.

Anticipatory Treatment.

Before concluding my paper I should like to say a few words on prevention, or what I shall call here "anticipatory treatment," because it is very germane to our subject, and recent work is bringing one aspect of it into prominence. I shall not here speak of means for avoiding the exacerbations so common in bronchiectasis in its earlier stages, but confine myself to one point—namely, the dangers of bronchial aspiration. First, there are the cases, all too common, of bronchial suppuration, and later bronchiectasis, caused by aspiration of broken teeth, cotton-wool plugs, and the like, especially after tonsillectomies and tooth extractions. Secondly, there are the cases where bronchiectasis or "damaged lung" is already present, and where a severe or fatal lung suppuration follows operation, rightly considered necessary, for chronic infection in the throat, nose, or nasal sinuses. Such a result is due to aspiration of septic material during anæsthesia, and the same may happen also from septic mouth secretions or vomit during operations in other areas. Now recent work has shown how easily aspiration of mouth secretions occurs under general anæsthesia, and how frequently post-operative lung conditions are due to this cause. Where there is a bronchiectatic or damaged lung such aspiration is, of course, especially dangerous. Hölscher showed by the use of gentian violet that the râles developing during ether anæsthesia were due to aspiration of the mouth secretion, and not to bronchial irritation and secretion caused by the gas. Myerson, examining patients after tonsillectomy under light anæsthesia with a bronchoscope, found that 90 per cent. of cases where the cough reflex was lost had aspirated mucus into the tracheo-bronchial tract. Lemon, of Rochester, working with a barium mixture coloured by gentian violet, found, in dogs, that if the head was raised bronchial aspiration occurred whether anæsthesia was light or deep, and that the suction pump failed to prevent it. Where the horizontal position was used aspiration was less, and diminished steadily as the Trendelenburg position was approached. Similar aspiration must probably take place, also, where the protective mechanism breaks down under severe illness, delirium, or alcoholic intoxication, and especially where vomiting occurs. The means of avoidance lie, of course, in posture, in the maintenance of a head downwards position under all these circumstances until the cough reflex is again fully established, and I think we who see these chest conditions should broadcast this danger to all those who may be responsible for these happenings. Should bronchial suppuration follow the aspiration of septic material under an anæsthetic it is stated by Willy Meyer, of New York, that bronchoscopic aspiration at an early stage, combined if necessary with lavage, will bring such cases to cure, even where abscess formation has occurred.

At the conclusion of this paper I should like to record my admiration of the work being accomplished in chest surgery, and especially in the treatment of pulmonary suppuration, at the present time in America. Team-work and coöperation are the basis of this work; an enlightened coöperation of the physician, surgeon, radiographer, and bronchoscopist, for in America, as I have already remarked, bronchoscopy has become a specialty all to itself. They hold over there, and I think they are right, that such team-work is a more rational proposition, and will give superior results, than the "physician-surgeon" idea which is evolving in the Scandinavian countries, and in one centre at least in Germany. Where we cannot here even boast of a section devoted to chest disease as a whole, they have an "Association for Thoracic Surgery" with membership of 100, and an annual meeting whose transactions are always full of interesting and enlightening material. Pulmonary tuberculosis is not excluded from their programme, and here again I think they are right. Now that the interests of tuberculosis as a whole are being well-attended to, it is fitting that its problems as a chest disease should receive special consideration at the hands of chest physicians and surgeons. A society, or at least a yearly congress for the study of chest disease as a whole, embracing physicians, surgeons, laryngologists radiologists, and anæsthetists, seems to me greatly needed in this country, and only thus, in my opinion, will any real progress in this branch of disease be brought about in the future.

II.—BRONCHIECTASIS FROM THE SURGICAL ASPECT.

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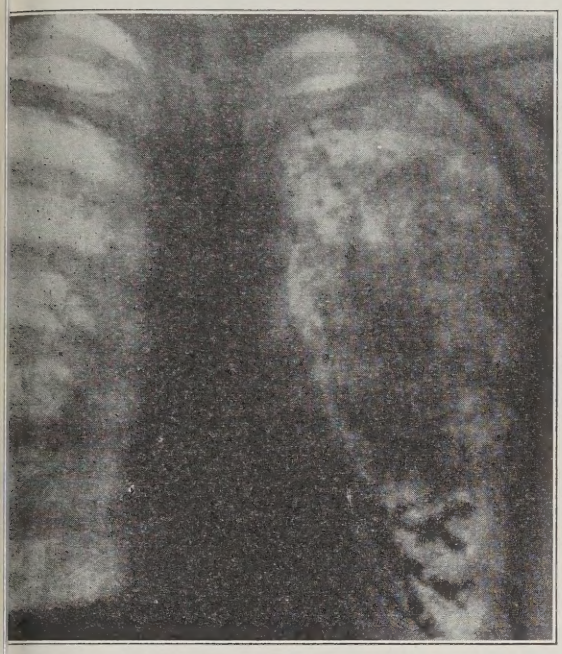
THE surgery of pulmonary infections, more especially of bronchiectasis, is still in the stage in which abdominal surgery was 30 or 40 years ago. By that I mean that the surgeon does not as a general rule see such cases until the condition has been in existence for a considerable time. Until the larger, as well as the smaller, bronchi are affected, their walls dilated, made rigid by fibrous tissue, and anchored by more fibrous tissue existing in the tissues outside them. Until the patient is enfeebled by long-continued toxæmia, loss of sleep from constant coughing, recurrent hæmorrhage, and in some cases by amyloid disease. Under such conditions it is matter for surprise, not that surgery does not produce better results, but that it produces results as good as it does. I hope that one result of such discussion as this will be a closer working together of the physician and surgeon at a much earlier stage than is as yet common.

Diagnosis.

The diagnosis is the field of the physician. It is in many cases difficult, especially in the upper lobe and in the earlier stages. The physical signs may be those of chronic bronchitis, or of pulmonary tuberculosis. In cases of bronchial obstruction by new growth or foreign body, the diagnosis is often not made until a late stage. It was said to me only a few years ago by a leading physician that it was

FIG. I.

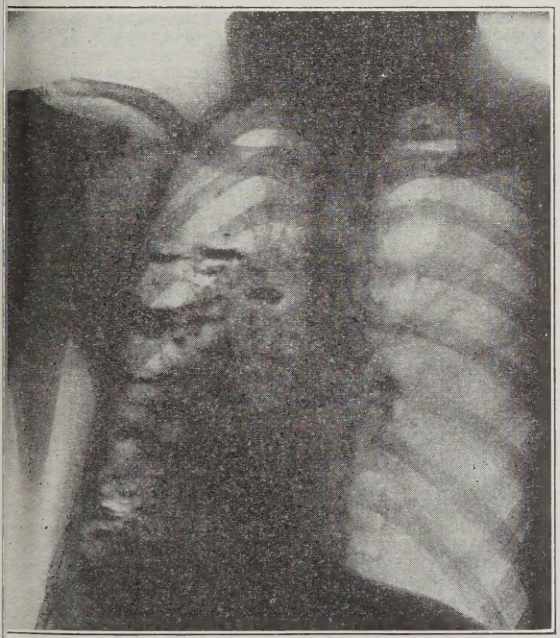


piodol radiogram demonstrating dilatation of bronchi of lower
)e. No lipiodol enters the alveoli through the dilated bronchi.
Patient recumbent.

FIG. II.

Lipiodol radiogram demonstrating sacculation of bronchi in lower lobe. Patient recumbent.

FIG. III.



ipiodol radiogram demonstrating multiple sacculation in whole right lung. Fluid levels well shown. Patient erect.

FIG. IV.

Lipiodol radiogram from same case as Fig. III. 8 days later, showing some dilatation and sacculation of bronchi of left lower lobe. Some lipiodol is retained in the cavities of right lung. Patient recumbent.

not possible to diagnose bronchiectasis until the physical signs of a cavity were present. To-day there are two methods which give great aid in the exact diagnosis. The older is direct bronchoscopy by which, first, bronchial obstructions may be actually seen and in some cases removed, and secondly, the bronchi from which pus is coming can be determined with accuracy. When our bronchoscopists are supplied with sufficient material for constant practice they will be able to emulate our American colleagues and dispense with general anæsthesia, for in my experience the American patient is not more phlegmatic and insensitive than the British one. The more recent advance is the introduction of some substance opaque to X rays into the air passages. This has the advantage that the condition of the bronchi which are beyond the reach of the bronchoscope is rendered visible in a radiogram and the extent of the disease is determinable.

In this country lipiodol, a combination of iodine with a vegetable oil and containing 40 per cent. by weight of iodine, is the substance most frequently used. Iodism does not occur unless the oil is coughed up and swallowed as the iodine is in chemical combination and can only be set free by a process of digestion. Lipiodol is non-irritating and produces no sensation as it passes into the trachea and bronchi. There are three methods of introducing it.

Technique of Lipiodol Radiography.

1. It may be introduced through a bronchoscope by means of a syringe with a very long nozzle.

2. After anæsthetising the larynx by a spray of cocaine, a narrow rubber tube with a metal end is lowered into the trachea. The metal end is visible on the fluoroscopic screen and by altering the position of the patient can be coaxed into either of the lower bronchi. The lipiodol is then injected by means of a syringe.

3. The method I prefer is to puncture the cricothyroid membrane by a needle and inject directly into the trachea. The technique is as follows. With a hypodermic syringe filled with 1 per cent. novocaine a cutaneous wheal is made. The syringe is then filled with a 5 per cent. cocaine, the cricothyroid membrane punctured, and about 10 ℿ injected. This renders the larynx less sensitive so that drops of fluid do not provoke a spasm of coughing. A special syringe which I have devised is now filled with 20 c.cm. of lipiodol. In order that the viscosity of the oil may be reduced to the point at which it will flow readily through the needle, both the oil and the syringe should be heated. With the patient recumbent and tilted slightly to the side which is to be examined, the cricothyroid membrane is again punctured with the needle, which is 2 cm. long and, therefore, does not reach the posterior wall of the larynx. The oil is injected slowly. For an adult 20 c.cm. is a usual amount to inject. If the upper lobe is to be investigated the head and shoulders are lowered for a minute or two. The patient should take a few deep breaths as the fluid is then aspirated into the smaller bronchioles and alveoli. Lipiodol is coughed out of the bronchi if there is no obstruction within 24 hours, but if it reaches the alveoli it appears to remain for a very long time, in one of my cases for 18 months, but it apparently produces no ill-effects.

The patient should be radiographed both in the erect and recumbent position, as sometimes what appear to be single large cavities are shown by fluid levels to be composed of several smaller ones. In order to avoid iodism in a susceptible person, the patient should be instructed not to swallow any oil which may be coughed up. The needle should be sharp in order to avoid pushing the mucous membrane inward and so injecting the lipiodol between it and the thyroid cartilage. I have seen this happen, but no ill-consequences followed. By withdrawing the piston slightly air is drawn into the syringe if the point of the needle is in the lumen of the trachea.

Fig. I. is a radiogram of the chest of a girl who was bringing up much stinking sputum. An able physician was unable to detect by physical signs which was the affected lung, or even that she had bronchiectasis. An ordinary radiogram gave no help. After injection of lipiodol it was clearly demonstrated that the bronchi of the lower lobe on the left side were dilated and that the rest of the lung was normal. Fig. III. shows a different type of case in which the right lung is occupied by numerous cavities. The radiogram was taken in the erect posture and the horizontal lines show the fluid levels. The condition of the left lung is shown in Fig. IV., this time taken lying down. The second film was taken eight days after the first and the presence of lipiodol in many of the cavities in the right lung after this interval shows that drainage is not free.

Treatment.

Except in children the medical treatment of bronchiectasis is in most cases merely palliative. While under active treatment life is rendered tolerable, the amount of sputum is greatly reduced, and its fœtor is diminished. But as soon as this active treatment is intermitted too many cases quickly relapse. In the case of a working man or woman it is certain that no continuous employment is possible. There is always the risk of a cerebral abscess. Jex-Blake [1] showed that in 108 fatal cases death was due to cerebral abscess in 15. He also stated that of 30 cases due to pleurisy and pneumonia the average duration was 39 months and the maximum 144 months. Of 40 cases due to bronchitis the average duration was 110 months and the maximum 600 months. The expectation of life then is not of a high order, and in the cases with much infection that life is not a happy one. It is considerations of this kind which render surgical procedures of some severity justifiable. I should say now that before any surgical measures are taken a proper course of medical treatment should be undertaken to get the patient into the best possible condition.

External Drainage Operations.—These are only of value where one or a few bronchiectatic cavities are present. A permanent fistula results. But it must be remembered that one ounce of pus from a cavity will sometimes collect 19 more ounces on its way through the bronchi. If the one ounce is drained away externally the rest is not formed. I have seen this result follow such an operation. But the number of cases suitable for external drainage are few.

Collapsing Operation: Artificial Pneumothorax.—Collapse of the lung by this method is of great value in the early case. I feel that it should be used as a routine in cases where pneumonia is followed by fibrosis whenever the absence of pleural adhesions allows it. Fibrous tissue only contracts when it is young and after a sufficient time has been allowed for it to become adult the lung may be allowed to expand. If sputum returns the collapse should be made permanent by a thoracoplasty. In cases of old standing artificial pneumothorax is still sometimes possible. If a complete collapse is obtained and the patient is not benefited then the lesser collapse obtained by thoracoplasty is contra-indicated. If, on the other hand, the sputum disappears or is very much reduced, then a good case is made out for making the collapse permanent by rib resections.

Phrenic Exeresis.—This little operation, which is performed in a few minutes under a local anæsthesia, is sometimes usefully done as a preliminary to other measures. In itself it rarely suffices. In one case, however, in which I did it the sputum was reduced from two pints to from three to four ounces. This result was not permanent. The condition of the patient was improved, he put on 2 st. in weight, and was obviously a better surgical risk for further procedures.

Thoracoplasty.—The best results are obtained by rib resections when one lobe alone is affected. The removal of ribs must be much freer than in cases of pulmonary tuberculosis. Except in the earlier cases paravertebral resection is not enough and should be supplemented by an anterior resection as in Wilms's operation or even by complete decostalisation in several stages. There are two classes of case in which a good result may be anticipated. First, those in which preliminary artificial pneumothorax has produced a total absence of sputum or has so diminished its amount and altered its character that life is

[1] Brit. Med. Jour., May 1st, 1920.

rendered tolerable, and secondly, where there has been such a degree of contraction that the diaphragm is pulled up, the mediastinum is pulled right over, and the ribs are in the expiratory position. Such a lung has done its best to close its own cavities and if permitted, by mobilisation of the chest wall, will contract still further. The objection that the largest bronchi still remain patent is not of real weight as the drainage from them is free so that, although some mucoid secretion still has to be coughed up, infection is controlled and the fœtid sputum disappears. Instances of the value of this operation are the following.

CASE 1.—A woman of 40, who developed bronchiectasis of the lower lobe following pneumonia. Her sputum was fœtid and amounted to 3 oz. a day. While under observation for three months the physical signs extended to the upper lobe and the sputum increased. A Wilms's rib mobilisation was done and the sputum disappeared. She has been free from sputum for nearly four years and earns her living as a milliner.

CASE 2.—An officer of the Indian police, who received a wound of the lower lobe of the right lung during the war; bronchiectasis followed. I saw him seven years later when he was on the point of being invalided out of the service. At that time he was bringing up 7 oz. of stinking sputum each day. A complete pneumothorax was obtained and his sputum was at once reduced to a drachm of sweet mucus in 24 hours. The collapse was made permanent by a paravertebral thoracoplasty done in two stages, and he returned to duty and has since been promoted. He has had no sputum for three years. He was stationed at an elevation of 5000 feet and writes that he can walk 15 miles and can play three or four sets of tennis.

CASE 3 (Fig. II.).—A girl of 20, who, at the age of 4, had pneumonia. When seen she was producing two pints of the foulest sputum daily. Under medical treatment her sputum diminished to 10 oz., but remained foul. She still had severe headaches and a very furred tongue and was unable to enjoy her food properly. After a paravertebral resection her sputum diminished to 2 oz. a day and became sweet. She lost her headaches at once and her tongue became clean. The operation was only done three months ago and she may possibly improve further. As it is she is content as she now feels well and is able to live a normal life. It would have been better to have done a more complete resection, but at present she does not wish it.

As an instance of the type of case where such a limited resection is unsatisfactory I will quote the following.

CASE 4.—A man with bronchiectasis of long standing on whom I performed a phrenicotomy followed by paravertebral thoracoplasty. No benefit followed, the amount and character of the sputum being unaltered. In this case no collapse was obtained owing to the rigidity of the chest wall. A complete decostalisation might have had a better result.

I believe from my experience that the operation is attended by more risk in bronchiectasis than in pulmonary tuberculosis, at any rate in the advanced cases. Deaths from pulmonary embolus and thrombosis are certainly more frequent.

Lobectomy.—The extirpation of a grossly infected lobe must always be a hazardous operation. It is only justifiable in cases where a preliminary collapsing operation has been unsuccessful and where the patient's life is intolerable. The modern method of, where possible, bringing the lobe outside the chest wall and fixing it there, removing it two or three weeks later, appears to offer a safer method of extirpation than the older one of amputating within the uncollapsed chest. This operation has been done in France and Dr. Harrington, of the Mayo Clinic, tells me he has done it three times in America without a death. My colleague, Mr. Tudor Edwards, has also, I believe, had a successful case.

Cautery Lobectomy.—This operation, devised by Evarts Graham, is not really a lobectomy so much as a very complete drainage operation. He makes a cross section of the bronchial tree with the actual cautery and has had fair success. In his hands, however, there have been deaths from hæmorrhage and air embolism and in the hands of others the deaths from bleeding have been more numerous still. Those surgeons in America and Canada who have tried it are not satisfied that it is safer than lobectomy. In bilateral cases the surgeon can do little, but as unilateral cases form over 50 per cent. of the total there is hope for the future in the close coöperation of the physician and surgeon working together. Prophylactic treatment by artificial pneumothorax may reduce the number of cases suitable for the surgeon, but where the condition is already established I would urge that collapsing operations should be done in the early stages, when a limited resection of ribs is more likely to produce a real cure. Even where the operation is only palliative it will in the earlier cases enable the sufferer to earn his living without constant resort to courses of medical treatment followed by as constant relapses.

SIGHT-TESTING OPTICIANS AND EYE DISEASE.

BY G. P. HAWKER, B.C., M.D. CAMB.,
SURGEON TO WEST OF ENGLAND EYE INFIRMARY; OPHTHALMIC SURGEON TO WEST OF ENGLAND BLIND INSTITUTION, ETC.

AT the present time when, under the scheme of ophthalmic benefits, expert advice is available to most people who are not eligible for hospital treatment or cannot afford to see an oculist privately, it is interesting to note how frequently one comes across serious eye and general disease in patients, who have been fitted with glasses and sent away presumably without the disease being recognised. The cases cited are all from private patients—i.e., those who are in a position to pay the usual fees, and do not include any who were eligible for hospital treatment or seen there. Only one of the patients was referred for further advice and that only after a long interval, and it is therefore inferred that the conditions were not discovered. None of them had been to the jeweller-seller of spectacles, who supplies spectacles which the person chooses for himself out of the box. In two cases definite treatment had been tried, one of which was the attempted removal of a foreign body under drops for the relief of pain.

Clinical Illustrations.

CASE 1.—Woman of 30. Something in right eye three weeks ago in train. To optician in about ten days, some black shiny stuff having come out two to three days before. Some drops put in to ease pain and given some lotion to use. Went again next day and then eight days later. Been typing all time but much watering and pain like toothache. Vision: Right = 6/12 (2); left, 6/12; corrected, 6/6 and 6/5. I removed a small foreign body like a yellow husk. Some distortion from scarring was left, and both lenses showed at the periphery fluffy dots of the congenital type.

Wrong Spectacles.—CASE 2.—Woman of 52. Complains of pains back of head and giddiness. Wears cylinders of +3 spher. with 1 cyl. right eye and +2·5 spher. with 1 cyl. left. Vision: Right, 6/36, with +4·5 spher. = 6/6; left the same.

CASE 3.—Spectacles from optician. Has cylinders wrong axis. Both lenses marked vacuoles and fine dust opacities. Well-marked Fuch's colobomata.

CASE 4.—Wears bifocals from optician. Right +3 and +6; left +4·5 and +8. Vision: Right = 6/24, with −0·5 = 6/12 (2); near vision +2·25 = J4; left = less than 6/60, with +3 = 6/9 (4); near vision +7 = J1. Both lenses show considerable radial opacities.

Corneal Ulcer.—CASE 5.—Woman of 51. Worn spectacles from optician for one week. Complained of difficulty with near vision and slight cold in left eye for a week. Eye was red with sensation like grit and could not stand the light. Given two pairs of spectacles and lotion and a bottle of medicine and told to come back in a week. Left eye showed a marginal ulcer and was very injected.

Keratitis (old and recent).—CASE 6.—Woman of 27. Sight hazy some months and lids stick mornings. Spectacles for seven years; last pair 12 months ago from optician. Yesterday sudden diplopia and mistiness left eye; saw two lots of cars and two roads. Examination showed paresis

left ext. rectus and recent and old interstitial keratitis, recent only in left but old in both with tracks of vessels. History of old T.B. spine.

Absolute glaucoma; chronic, not quoted, as I am not certain of the type of optician, I think a jeweller.

Choroiditis.—CASE 8.—Man of 26. Worn spectacles six years as lithographer, first from eye infirmary, then opticians, and recently to one who could not make him see. Left eye misty six days. Vision: Right, 6/60 −4=6/4·5; left, less than 6/60 −3, with −0·75 cyl.=6/12. Right eye normal but for small crescent. Left, vitreous many fine dust opacities; below macula irregular patch of recent choroiditis of disc's size and below two other patches, one old and one fairly recent. Many dental abscesses.

CASE 9.—Man of 50. Scratched left eye with nail and shows subconjunctival ecchymosis. Recently spectacles from optician. Vision: Right, 6/18 and with +1·5=6/12. Has much perimacular choroiditis with much pigment, obviously not noticed by the optician, who did not tell him why his sight was so defective.

Cataract.—CASE 10.—Woman of 66. Worn spectacles a few months from optician, −2. Vision: Right, 1/60, and left=light only. Lids chronic blepharitis. Spectacles no use to her and should have had treatment for lids long ago.

CASE 11.—Woman of 73. Spectacles from optician a week ago. +0·75 spheres in rolled gold frames for which she was charged £2 2*s*. Vision: Right, 6/36, and with +1=6/24; left, 6/36 (1) and no improvement. Considerable posterior cortical opacities both, lids chronic blepharitis with scabs.

Diabetes.—CASE 12.—Man of 65. Spectacles three months ago from optician. Right, 6/18, with +1=6/9; left, 6/24, n.i. with spectacles. Indefinite fluffy opacities both lenses; arteries tortuous and minute small recent hæmorrhages both. Much thirst, drinks 3–4 quarts a day; referred to doctor, who found diabetes.

CASE 13.—Woman of 62. For three weeks pain above right eye with headache and nausea. After three days sight misty and things looked smoky. Daughter noticed sight of one eye—i.e., the pupil—larger than the other. Had spectacles from optician from time to time for 12 years. Examination showed right pupil dilated and fixed, lens like wet granulated sugar, and vision 6/60 n.i.; left eye 6/18, and lens showed ill-defined dots. Referred to own doctor who reported large amount of sugar.

Cyclitis.—CASE 14.—Woman of 48. Sight of left eye failing eight months, when she went to optician and was given spectacles. Bad mists getting worse. Vision: Left=fingers at 2 yards; pupil sluggish, vitreous many dust opacities, while fundus showed multiple discrete patches of choroiditis with some atrophy.

Vascular.—CASE 15.—Man of 68. Stroke five months ago, right side, partial, cleared up. Sight of right eye went suddenly July 27th; bumps into things on the right. Seen 30th, had spectacles yesterday from optician "to rest his eyes." Same morning pushed a 12-gallon milk-can about ¼ mile. Vision: Right, 6/24 (2), with +2=6/9. Fixation good. Fundi show arteries small and thread-like veins cut and full. Fields showed complete homonymous hemianopia. Here distinct danger to life was involved.

CASE 16.—Woman of 69. Recently spectacles from optician, who frightened her badly by telling her she had cataract but said nothing of the fundus. The lenses showed a few feathery peripheral streaks not affecting sight, which corrected was 6/6, but the fundi showed much Tay's choroiditis, the arteries were corkscrew and just above the left macula was an ill-defined white exudate.

CASE 17.—Woman of 77. Mists in front of eye three to four months, yellow zigzags two to three years. Last summer woke up suddenly and everything black for some hours but sight got all right though always misty. Some years ago bleeding from nose for a week. Spectacles from the opticians to a London hospital (whom, she said, ought to know all about the eyes) four to five months ago. Moderate cataract both, vitreous many coarse opacities. Vision: Right, 6/36, with head tilted back; left, 6/36, corrected 6/18. Right fundus showed senile macular changes with many old soft-edged white hæmorrhages, while the left showed a recent big hæmorrhage above the macula and many smaller of all stages.

In addition I have seen many cases, who have come to me in great distress, having been told they were suffering from cataract, of which many seemed to have great dread, only to find they had two or three streaks such as might cause no trouble for many years. Only three cases of wrong spectacles causing symptoms are quoted.

Medical Societies.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

AT a meeting of this Society held on Nov. 19th, with Dr. E. H. SNELL, the President, in the chair, Sir WALTER FLETCHER opened a discussion on

RESEARCH WORK IN PREVENTIVE MEDICINE,

from the point of view of the Medical Research Council. He referred to the work of the Council in promoting the health of the people and preventing disease, and in particular to the recent researches of Dr. Corry Mann on the diet of school-boys.[1] He said that the medical officer of health had a power of applying the fruits of research that was far greater in many respects than that of other members of the medical profession. He advocated very strongly the establishment of coöperation between the Medical Research Council and medical officers of health. The Council might be expected to promote to the utmost of its power the developments in all primary sciences in all fields which were likely to bring new weapons to the work of the medical officers. The real difficulty in getting effective application and development of research work in the field of medicine was the fact that experiments, in by far the greater number of cases, had to be done with animals, so that there must always be adaptations and adjustments. One of the difficulties of experiments on men was to arrange for proper controls. He referred to the remarkable results obtained by a certain Scottish medical officer of health in the application of the Dick test and the new preventive treatment of scarlet fever, which disease had been abolished in the nursing staffs of the hospitals in his district. So far as he knew this had not yet been tried in London; it was a benefit that had long been waiting for application. A similar "lag" was to be observed in the case of the prophylactic treatment of diphtheria by toxin-antitoxin.

Dr. W. G. SAVAGE spoke from the point of view of the M.O.H. He said that research work was the foundation of preventive medicine, the touchstone of its validity, and its only hope for the future. The medical officer of health stood as the official exponent of the application of preventive medicine.

The Field.

Far fewer mistakes would be made if facts were established on a firm basis by research before administrative measures were adopted as a general procedure for the country. Unfortunately, the validity of an attractive hypothesis could often only be tested by basing administrative action on it. The solution of this difficulty was to adopt the necessary action in sections of the country only, and to treat it as a research problem instead of booming it as an administrative acquisition. For example, the widespread installation of isolation hospitals had involved great expense to the neglect of other methods of controlling infectious diseases. Research would have demonstrated the unsoundness of the original hypothesis in the first place. If the research attitude to public health problems had been in continuous application, a wider and truer conception of the truth of many problems would have been reached much earlier. Simple goitre and acute rheumatism were problems of the moment, and the world was full of theories—many of them excellent hypotheses if regarded purely as bases for critical research. There was an immense sphere for laboratory research, but its inevitable complexity made it difficult for part-time workers. Research work in public health by no means meant laboratory work, although this was an excellent introduction and training for administrators and field workers. There was a vast deal of waste of

[1] THE LANCET, August 7th, p. 295.

research material, for instance, the piles of data elicited in connexion with school medical work and thrown into an ill-digested heap between the covers of an annual report. Rapid routine work and research deductions from the same material were almost incompatible, and chief and assistants had no time for the little bit more which would gain so much more. A sharp distinction should be drawn between data drawn from ordinary routine work and those drawn from work carried on under the especial supervision and attention implied in a research outlook. Eminent statisticians were inclined to pay too high a compliment to the value of ordinary routine figures, and were apt to base conclusions on them which clearly could not be true.

The Man and His Employers.

It was often assumed that anyone could do research work. Dr. Savage's opinion was that about 10 per cent. of average qualified men were capable of efficient research, and that investigators could not be made by training. He did not agree that every officer in the public health service should undertake research work. Rather should suitable individuals be selected, their facilities enlarged, and their efforts seconded. To find and to utilise workers in the field of preventive medicine was one of the paramount needs of public health.

Of the several factors which united to make the harvest so scanty the chief was the lack of time. Local authorities who appointed and controlled officers in the public health service had but the dimmest idea of the importance of research work, and with but rare exceptions contributed nothing to it but severe discouragement of any expenditure on equipment or additional personnel. Nor did central health and educational authorities give much help in the stimulation of local bodies. Moreover, there was a lack of willingness among the officers themselves to devote their leisure time to research, and great credit was due to those who persisted in the face of much passive discouragement.

Criticisms of the Present System.

Prof. W. W. C. TOPLEY said that the greatest triumphs of bacteriology had been in the field of preventive rather than of curative medicine, and that the medical officer of health was in a quite exceptionally favourable position for taking the wide biological view of problems.

If research was to play its proper part in the service it must be given reasonable help and encouragement, at present conspicuous by their absence. A broad distinction should be drawn between routine examinations and investigations leading to an advance in knowledge. If men of active and inquiring minds were to be attracted to the laboratory side of public health work they must not be condemned to too much routine work. A young post-graduate should feel that a laboratory post with facilities for research was one of the alternatives to look forward to if he entered the public health service. The R.A.M.C. had provided an instance of the benefits which accrued to a service from the presence of an able and original laboratory investigator. If the bacteriological laboratory were made an integral part of the public health service there would also be a considerable drift from the laboratory to the administrative side and back again, to the great good of the service as a whole. A man who had learned what a laboratory could and could not do was clearly at a great advantage when he came to investigate infective disease in the field. The present system, whereby most of the public health laboratory work was done in university departments, endowed institutions, or commercial laboratories, was unhealthy for all concerned. The work was well and economically done, and the institution gained financially, but so long as they undertook such work it must be a first charge on their energies, whereas the primary duty of universities and research institutes should be the training of students and the advancement of knowledge without regard to its immediate application. A man could not serve two masters. The research work of such institutions did not in any way arise out of the routine examinations, and must be developed along its own lines and not governed by the relative urgency of particular problems in applied bacteriology.

The Remedy.

The position which might well develop if local authorities took over their own bacteriological work would be worse than the present one. It was essential to see that each institute combined original research with routine investigation. For this the unit must be large. The small laboratory was very expensive and relatively inefficient. For example, the cost per test of the Wassermann reaction would be five times greater in a small laboratory than in a large one. Performance of a large number of tests daily was a valuable safeguard against faulty reagents or other sources of error. Moreover, in a large laboratory the staff could enjoy considerable elasticity of work, which would enable them to undertake research. This would be still better provided for if several laboratories could be so linked as to facilitate interchange of staff and the concentration of special departments of work in different institutions. The work of such laboratories must be confined rigidly to those examinations which were concerned with the ordinary routine of public health work, as distinguished from that usually called clinical pathology. The areas to be served by such laboratories could not be determined by the present administrative boundaries. The danger of cramping research work and producing a less efficient and more expensive service by some attempt on the part of local authorities to set up each their own little laboratory was real and urgent, and some society such as this should put forward a considered policy.

The Statistical Method used by the Amateur.

Dr. MAJOR GREENWOOD defined research as the bringing to light of the relation between phenomena or facts, which might either have been long known or first brought to light by the investigators; if the relations deduced led to some practical rule which might cause saving of life or reduction of pain or sorrow, then that research had value for the public health service. Very few medical statisticians had been in a position to modify facts. In the enormous catalogue of ascertained facts that we now had there were important relations to be deduced between certain of them which had never been noticed, but it was much harder to find them than it was before the eminent Victorian statisticians had done their work. The modern seeker, however, had the advantage that the field had been very much enlarged since then. Several countries now had medical statistics as good as our own, and if the medical officer had to ration his time between learning statistical methods and making himself familiar with the statistics of other countries, he should devote the greater part of his time to the latter. The speaker would not make algebra a compulsory subject for the D.P.H. but he would make the ability to read French and German fluently an absolute qualification. Facts should be taken first-hand and not from other men's books. He referred to the Medical Research Council's recent reports on Diet for School-boys and the Evolution of an Epidemic of Diphtheria in a Boarding-school, and pointed out how each depended on continuous observation of a closed community in which the changes in composition could be exactly known and studied. The value of boarding-schools for research had been underrated; no school had yet found its Gilbert White, ready to study what was happening all the time. Much light might be thrown on the evolution of respiratory epidemics, and on what happened before an outbreak of such diseases as scarlet fever and poliomyelitis. The disadvantage of mice as the subjects of experiment was that we could not speak their language and all cases were necessarily fatal.

The departmental committee of the Ministry of Health on cancer had recently set itself the question: How many people are radically operated on for cancer

of the breast and how much longer do they live than people who are not, and if the proportion is small, why is it small? This needed the coöperation of medical officers of health, and required that all sanitarians should think the problem out and consider how it might be studied. It was a striking feature of the work of the greatest living master of statistical method—Prof. Karl Pearson—that scarcely any of the efforts of the public services had been praised by him. Destruction must precede construction, but there was a danger of supposing that "Not proven" and "Not guilty" were identical verdicts, and of regarding the medical statistician as a superior person picking holes in other people's work.

Discussion.

Dr. J. T. C. NASH said that in his district of Norfolk there were very few isolation hospitals, and not 10 per cent. of the infectious cases were isolated. It was, however, very sparsely populated. There was a scheme of notification by school-teachers of all cases of absence due to infectious disease. Copies of these notifications were sent to district medical officers, and all agreed that much more information was gained thereby than by the more usual methods. The figures of the district compared very favourably with those of an adjoining area where there were eight hospitals and 80–90 per cent. of cases were isolated. Last year there had been 550 notifications of scarlet fever and no deaths. He was against small units; an isolation hospital was only of use if it were large, well staffed, and well looked after. He would add to the qualifications of the D.P.H. a good knowledge of logic.

Dr. ANDREW BALFOUR pointed out that it had been said that in no single case had the organism of a communicable disease been discovered by any medical officer of health in this country. This had not been to any great extent the fault of the officers, but he was concerned with any measures of improvement that might be effected by the new School of Hygiene and Tropical Medicine. It could not be expected to create research workers, but it might be able to find out who were the men who had received the divine touch and guide them and suggest to them fruitful lines of research. It must also educate the local authorities, which was no easy task. They must be shown graphically that it would pay them handsomely to allow their officers some time off to see what was going on. This might be done by the proposed great Museum of Hygiene; invitations might be sent to all laymen connected with public health to come up to demonstrations of how research had helped to combat disease. The School should also provide refresher courses in research work and a training in scientific French and German, and, if necessary, other languages. All medical research should tend towards the preventive idea.

Dr. A. B. MCMASTER asked what would be a suitable unit of size for an effective pathological laboratory. He pointed out that medical officers had done much research into communicable disease, but naturally their work had not gone, and should not go along the lines of laboratory research. He instanced the pioneer work of Niven on the spread of tuberculosis.

Dr. E. WARD said that the chief difficulty of research among private practitioners and the accessory public health services was that of finding people who could do research work. So many seemed to think that enthusiasm was the only quality necessary. Most of all should they beware of research by questionnaire, which seemed to substitute for the obiter dicta of great men the opinions of small men, and led to no great advance. It had been said that research was hampered for lack of advice, but the man who depended on his research for his initiative was not likely to achieve more than mediocrity.

Dr. W. JAMESON pleaded for clinical research, especially into the problem of small-pox and alastrim. It appeared that it was possible at the end of the third week of an epidemic to state definitely whether it was the kind of "small-pox" that was going to kill people or not. What was happening was that in the provinces large numbers of people were coming to regard small-pox as a trivial disease, less troublesome than vaccination while in London it had really been a horrible thing. The "country" type only killed those at the extremes of age or those suffering from some other disease. Of four deaths in Gloucester recorded as due to small-pox, one was an infant, another was a baby with severe diarrhœa, the third was a child with malignant measles and the fourth was an old gentleman.

Dr. R. MAULE HORNE brought forward the point of view of public opinion, which sometimes took a great deal of inducement to recognise research and was apt to ask "what the man meant by poisoning innocent children."

The PRESIDENT said he could not agree that research workers could not be made. It was quite possible for a comparatively ignorant worker to make a discovery he was not even looking for. A vast responsibility rested on the Medical Research Council to direct work in fruitful directions. Many medical officers of health were doing unorganised work.

Reply.

Sir WALTER FLETCHER, in reply, said that the value of research was rising, and would rise more in public opinion. The great difficulty now was the want of sympathy of lay authorities, a difficulty that seemed to be less if a woman was in charge. Medical officers of health could do more than anyone else to help in educating public opinion, and should seize every opportunity.

Dr. SAVAGE, in reply, agreed about the complete worthlessness of questionnaires and small laboratories, but still maintained that research workers were born, not made. An accidental discovery was not necessarily research.

Prof. TOPLEY, in reply, said that the effective laboratory unit would roughly be one that cost between £10,000 and £20,000 to build, between £5000 and £8000 a year to run, that tested 20,000 to 30,000 specimens a year, and served a population of 400,000 or 500,000.

Dr. GREENWOOD, in reply, said that statistical research was the only kind that the ordinary assistant medical officer of health had a chance of doing, and pleaded that their seniors should encourage them in it and advise them to seek the help of the Medical Research Council.

MEDICAL SOCIETY OF LONDON.

DIAGNOSIS AND TREATMENT OF BRONCHIECTASIS.

AT the Medical Society on Nov. 22nd, Sir HUMPHRY ROLLESTON presiding, a discussion took place on recent advances in the diagnosis and treatment of bronchiectasis. The openers were Dr. CLIVE RIVIERE and Mr. J. E. H. ROBERTS, whose papers appear at pp. 1102 and 1106 respectively.

Discussion.

Two foreign visitors, in response to the President's invitation, said a few words. Dr. ARMAND DELILLE suggested the possibility of limited bilateral rib resection as a procedure of some promise, and Dr. SCHRÖDER, who said that he had not seen very good results from thoracoplasty, favoured a more extensive rib resection than had been advocated by Mr. Roberts.

Dr. L. S. BURRELL emphasised the value of medical treatment, pointing out that if one could get the patient sufficiently early medical treatment would keep him alive and well without surgical interference for the rest of his life. Before starting any treatment whatever, the cause must be carefully looked for, and foreign body, aneurysm, syphilis, or neoplasm excluded. The two courses of treatment that he advocated were posture and some form of creosote therapy. With regard to the more serious forms of treatment, if the patient did not improve, and there was definite evidence of localised trouble, one should try either artificial pneumothorax or washing out the tubes through the bronchoscope. When a satisfactory collapse was obtained, treatment by artificial

pneumothorax was very successful, but the trouble tended to recur when the treatment was stopped. He had seen very good results from washing out with the bronchoscope, and in skilled hands this procedure was certainly not painful nor very inconvenient. With regard to surgical treatment, in his opinion thoracoplasty was not satisfactory in these cases. His own preference was for pneumectomy with the cautery—Graham's operation. Lobectomy with the knife was so dangerous that one could hardly conceive it being justifiable. But he held that no surgical treatment should be attempted until the possibilities of medical treatment had been fully explored.

Mr. TUDOR EDWARDS said that the value of lipiodol in the diagnosis of bronchiectasis was definitely established. It was specially valuable when the question of surgical treatment arose, because it was essential for success that the disease should be unilateral, or at any rate that the extension to the better side should be known and the amount roughly estimated. Artificial pneumothorax would not cure established cases of bronchiectasis, and in those cases in which it diminished the sputum temporarily thoracoplasty would make that improvement permanent. In early cases artificial pneumothorax might allow for sufficient contraction of the fibrous tissue to prevent the extension of the disease, but as soon as the lung was allowed to expand this process would extend. He had performed phrenic evulsion on patients with bronchiectasis 20 times, and in almost every case there had been some improvement, either in diminution of sputum or amelioration of symptoms. In one or two cases evulsion had led to cessation of severe hæmoptysis in bronchiectatic cases; unfortunately, in a proportion of cases the amelioration was not maintained. The results of thoracoplasty were somewhat variable. He had performed this operation on 11 patients with bronchiectasis. In four of these the results had been excellent, three had no sputum nor symptoms, the sputum in the other case had diminished from 10 oz. (offensive) to 1 oz. (non-odorous) per day. The other cases gave less satisfactory or definite results. He had performed Graham's operation of cautery pneumectomy in one case, but the result had not been satisfactory.

Dr. F. G. CHANDLER said that he did not know whether lipiodol would give a characteristic picture in the really early stages of the condition, but he was quite convinced that it would prove dilatation at a stage when the symptoms were only slight and the general condition good. The diagnosis having been made and the condition having proved unilateral, decision was by no means easy. To advise a major operation, which was attended with risk, and from which definite results could not be absolutely promised, was no light responsibility. Postural treatment, creosote chamber treatment, and prolonged climatic treatment all helped, but it was doubtful if they would cure. Vaccines, he believed, from a recent experience, were not without risk. He thought the best course was to do a pneumothorax, keeping the lung collapsed for one year and then allowing it to expand. This might prevent an extension of the disease, and there was some evidence available that it might cure, but time alone would show whether this was so or not.

Dr. LENNOX WAINWRIGHT mentioned that he had a case many years ago which looked like dying. He was advised to inject ichthyol (5 per cent. in glycerine). The patient coughed up very violently and gradually improved; he was now 82 years of age.

Sir PERCIVAL HARTLEY thought that bronchiectasis was altering a little in character; it was not so offensive as formerly, and in view of these better conditions and prognosis it was specially needful that care be taken before advising serious surgical operations. Preventive treatment was essential after whooping-cough and broncho-pneumonia. Phrenic evulsion was a harmless method which could be used in a good many cases. Artificial pneumothorax did not often lead to permanent improvement. A certain number of thoracoplasties did well.

Dr. GEOFFREY MARSHALL pointed out the importance not only of posture but of exercises, and described a system of exercises worked out in the massage department at Guy's.

Mr. ZACHARY COPE asked whether anyone believed that creosote had any killing effect on microbes in the lung; it seemed to him more a matter of faith than of creosote.

Sir JOHN BROADBENT thought that the cases which occurred after pneumonia, whooping-cough, and the like were much more likely to have infected cavities and to give rise to offensive sputum than those which followed simply from pressure on the bronchus.

Reply.

Dr. RIVIERE said that the impracticability of patients who had to do their ordinary work resorting daily to the creosote chamber had been pointed out, but this was not necessary; after a time they might leave the creosote chamber safely if they carried on drainage or use it only at quite longish intervals.

Mr. ROBERTS said he regarded extensive operations in these cases in the light of an amputation—a confession of failure. But his point was that where medical treatment had failed the surgeon should be asked to come in at a stage when a simple operation would offer the patient a chance to lead his ordinary life.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.

AT a meeting of this Society held on Nov. 10th Dr. A. L. FLEMMING, the President, took the chair, and Mr. A. W. ADAMS read a paper on the

Treatment of Congenital Club-foot.

He spoke particularly of congenital talipes equinovarus as being the commonest variety. The ætiology was unknown, he said, but he inclined to the old theory put forward by Hippocrates and by Galen, that deficiency of the liquor amnii allowed pressure on the fœtus. The theory of arrest of development could not account, he thought, for some of the varieties. The incidence was greater among males and it was said to show a familial tendency, but this was found in two cases only of his own series, the patients being brothers. There was a tendency to associated deformities, and the condition often affected both feet; in Mr. Adams's series both feet were affected in half the cases. Discussing the usual deformity, he pointed out that two factors must be recognised—rotation inwards on an antero-posterior axis brought the os calcis up under the internal malleolus; rotation inwards on a vertical axis at the midtarsal joint brought the fore part of the foot pointing inwards, and the sole backwards. The tendons and ligaments on the inner side of the ankle-joint were shortened.

For a successful cure, said Mr. Adams, two things were essential: (1) early treatment, beginning at the age of one month if possible, when the tissues were pliable and the bones relatively plastic; and (2) regular, prolonged, and continuous treatment. It was a waste of time to attempt treatment on manipulative lines unless the parents realised that for success they must coöperate with the surgeon. For several weeks treatment aimed at reposition; for some months at retention; and for some years at education. The first step was to secure the reposition of the astragalus; this was brought about by manipulation around the antero-posterior axis. The astragalus was forced in under the tibia, and the os calcis was drawn downwards and outwards under the astragalus. In addition to forced movements by the surgeon the foot was moved as far as possible into the correct position several times a day by the nurse, being held there for a few minutes. When the posterior part of the foot was rotated, the anterior part was turned outwards on a vertical axis. Slight over-correction was the aim. In all cases some fibres

of the deltoid ligament had to be divided, in many cases part of the inferior calcaneo-scaphoid ligament must be severed, and in a few tenotomy was needed. As soon as the foot could be brought well out it was put up in plaster for several weeks, with changes and manipulation once a fortnight. The tendency for the plaster to fall off a fat leg and foot was met by carrying it up over the knee, or by incorporating strapping. The next step consisted in tenotomy of the tendo Achillis, without which attempts to correct equinus would stretch the plantar ligaments. The over-correction should not be too great. A wooden sole-plate was used with strapping to retain the foot in the over-corrected position. Movements and massage were continued at regular intervals, and this was the difficult time, for parents saw the foot in a good position and wished to discontinue attendances that had become wearisome. At 18 months a malleable splint down the back of the leg and along the sole was employed, fitted with a toe-plate to resist the tendency to varus. The child was encouraged to walk, but wore the splints day and night; a small overshoe was used with the splint. The régime of massage and movements was continued long after the splint could be discarded, and by the age of 3 the child could learn simple exercises and so coöperate in treatment. In some cases, however, iron supports were needed for several years, and in others—those which came late for treatment—cuneiform osteotomy was required. The only absolute bar to cure was failure to attend the surgeon regularly for the necessary period of several years. This might be interrupted by a variety of causes—illness in the family, a new baby, poverty, or, most exasperating of all, stupidity or carelessness of parents—any of these might vitiate the results of months of work. Long treatment in plaster seemed to interfere somewhat with the nutrition of the limb. Neither this nor some degree of flat-foot, which was not uncommon, appeared to cause the patients any trouble. There was a tendency to hallux varus when the child began to walk without splints, and in some cases an inward twisting of the tibia; osteotomy of the tibia might be needed, but had not been employed in any of the cases shown. In conclusion, Mr. Adams described the results obtained with 33 feet, to show how regularly results less than "good" were associated with sporadic attendance. Eight cases were shown to illustrate the later stages of treatment, and many photographs to demonstrate the application of various forms of retention apparatus.

Prof. E. HEY GROVES agreed that the greatest difficulty in treatment was to secure the efficient coöperation of parents. He thought that sufficient emphasis had not been given to the correction of the malposition of the astragalus; he had found that reposition in a small flat-foot was not easy, but thought that failures were often due to this part of the deformity not having been corrected. He advised osteotomy of the tibia where the foot looked inwards. Tarsectomy gave excellent immediate results as regards reposition, but the after-treatment needed to be just as careful and prolonged, and the final result was not so good, as with manipulative methods. He particularly admired the sole-piece used by Mr. Adams.

Mr. H. E. CHITTY agreed that the displacement of the os calcis was the most difficult part of the deformity to reduce. He found plaster splints very difficult to retain in position, and used a small internal malleable splint. In late cases he took out a wedge on the outer side to correct the heel, and found the remaining correction easy.

Mr. E. WATSON-WILLIAMS noticed that the first case shown, and several of the photographs, had the second or third toe pushed up out of line so as to lie on the dorsum of their neighbours. He asked whether this disappeared of itself later, what was required to correct it if not, and whether it was connected with the tendency to hallux adductus.

Mr. W. A. JACKMAN said that he regularly used Mr. Adams's splints. He had had very good results in seven cases out of eight with splints, not using plaster. All his patients had bilateral deformity.

The PRESIDENT asked whether the almoner's department had been used to follow up the cases and added that the wealthy failed to get the best treatment, as well as the very poor, for they were inclined to go from one surgeon to another, and thus lost the benefit of continuous treatment by one method. This type of deformity, he believed, was related to defective heredity, which was relatively common in remote and isolated districts.

Mr. ADAMS, in reply, said that he recognised that the posterior deformity was the most difficult to treat. The correction could be made at the same time as the abduction, and it was not difficult to overdo it. As to the advantage of plaster over splints at the early stage, he thought that splints needed daily attendance. The following of cases, he agreed, would be easier if there were an officer specially detailed for this service, and great efforts were often needed to keep some parents attending regularly.

Mr. E. R. CHAMBERS showed a case of carcinoma of the uveal tract in a woman of 55 of four months' duration. An exactly similar growth had been removed from the same site five years ago. He proposed to treat the condition with radium.

Dr. A. D. FRASER showed eight specimens of endometrioma, and briefly described them.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH.

ON Oct. 26th Prof. SHAW DUNN read a paper on

Disturbance of Renal Function in Experimental Nephritis.

Referring to the object and scope of his research into experimental nephritis in animals, he pointed out the difference between the acute form as seen in the rabbit and in the human subject, and showed the essential lesion in the former to be in the first convoluted tubule, and not in the glomerulus. He made the interesting observation in this connexion, however, that albuminuria did occur, and hence it might be presumed that some functional change took place in the glomerulus also. Describing the results of inducing nephritis in rabbits by giving sufficient doses of oxalates, he showed that there was a diminution in urinary nitrogen excretion and an increase in the blood-urea, sometimes to high levels. There was also, he stated, acidosis, and it was probable that an additional function of the renal tubule was the maintenance of the body's alkaline reserve. The diminution in the percentage of urea excreted and the rise in blood-urea showed a diminished power of concentration by the kidney. By the injection of saline, however, an artificial polyuria might be produced which washed out the urea in large quantities and brought down the level of the blood-urea. Prof. Dunn put forward the view that the retention of urea might be explained by the hitherto impermeable tubule cells being killed or damaged, and hence becoming permeable and permitting the reabsorption of urea. So, also, anuria might develop. The few experiments which had been possible on chronic tubular lesions confirmed the main conclusions and showed the importance of an adequate supply of water to secure a sufficient excretion of urea, and the danger of reducing this supply in cases in which the concentrating power of the kidney was permanently lowered.

On Nov. 3rd Dr. BARCLAY NESS read a paper on Difficulties in the Clinical Diagnosis and Prognosis in the various forms of Chronic Bright's Disease.

THE "PENNY IN THE POUND" AT RUGBY.—The board of management of the St. Cross Hospital, Rugby, is instituting a "penny in the pound" scheme to replace the existing "flat rate" which limited the number of cases admitted in proportion to the amount paid by each firm.

Reviews and Notices of Books.

THE HEART.

By ALEXANDER GEORGE GIBSON, D.M., F.R.C.P. Lond., Physician to the Radcliffe Infirmary. London: Humphrey Milford. Oxford Medical Handbooks. 1926. Pp. 108. 5*s*.

A BRIEF exposition of cardiology may be technical or it may be popular, but it can hardly be both. To compress even the most fundamental facts and theories of cardiology into 100 small pages is an impossible task, but it is surprising how much information this little book does contain.

A first chapter on general principles is followed by an admirable short account of the aims and methods of clinical examination, in which the author deals briefly with the recognition and significance of over-action of the heart, valvular lesions, cardiac enlargement, variations in rhythm, ætiology, and efficiency tests. Another useful chapter on the recognition of the normal heart and one on instrumental methods are followed by 30 pages devoted to diseases and disorders of the heart. This section is extremely condensed and the drawings illustrating the various lesions are not worthy of the space devoted to them. The two final chapters deal with the principles of prognosis and treatment, and are followed by a good bibliography. The views expressed by the author are for the most part in accordance with modern teaching. There are, however, certain statements with which many cardiologists will disagree. For example (p. 37), that the diastolic pressure corresponds to the loudest sounds; (p. 57) that subacute bacterial endocarditis is invariably fatal; (p. 70) that complete heart-block gives rise to the Stokes-Adams's syndrome; and (p. 95) that digitalis should not be given to patients with heart-block. Some of these views are perhaps open to differences of opinion; but the statements on p. 6, which imply that cyanosis is due to an increased tension of carbon dioxide in the blood, and that the condition of oxygen-want is seldom seen at the bedside, do not accord with facts now well established.

We doubt whether Dr. Gibson is right in believing that the subject of cardiovascular disease has yet attained a sufficient degree of exactness and finality to enable it to be treated on simple lines, but, at any rate, his book can justly claim to give a bird's-eye view of the present-day conception of the subject.

AGRAPHIA.

Über die Agraphie und ihre lokaldiagnostischen Beziehungen. By Dr. GEORG HERRMANN and Prof. Dr. OTTO PÖTZL. Berlin: S. Karger. 1926. With 29 illustrations. Pp. 380. M.24.

THE study of aphasia is in danger of becoming more than ever complicated by reason of the number and size of the contributions which it appears to invite. When a volume of nearly 400 pages is devoted to agraphia alone the wonder arises that its authors should not be content with supplying in more concise form the results of their researches; life is short, but the subject of aphasia seems unconscionably long.

The authors rely mainly on their case of tumour of the right parieto-occipital region in an ambidexter. Agraphia was the prominent symptom throughout, but some alexia, left homonymous hemianopia, some motor and sensory paresis of the left side, and innervation-apraxia of the fingers of both hands were also present. They distinguish this "parietal agraphia and alexia" as a definite clinical type, attributable to lesions involving the supramarginal gyrus and its immediate vicinity. They conclude that writing is bilaterally represented in the cortex, sharing this bilaterality with other components of speech but not with all. Some attention is given to agraphia of frontal origin, and to the occurrence of agraphia with other aphasic symptoms in lesions of temporoparietal site. It is rather by the accompaniments of agraphia in a syndrome than by that symptom alone that distinctions can be drawn between the varieties resulting from lesions in the three above-mentioned areas.

Included in the volume is an examination of a large number of recorded cases of agraphia, and sections are devoted to discussion of the relation of agraphia to apraxia, to micro- and macrographia, to so-called paligraphia, and "Lautagraphie." The conceptions of Bastian, Pick, von Monakow, Wernicke, Henschen, and Mingazzini in regard to agraphia receive attention. Thus it may be said the monograph is comprehensive in a noteworthy degree, but it is rather unwieldy and somewhat wordy, and its value would not have been impaired by greater succinctness and by more frequent summaries of the argument.

TOXICOLOGY.

Fifteenth edition. By ALBERT H. BRUNDAGE, A.M., M.D., Phar.D., M.S., Consulting Toxicologist to the Bushwick Hospital, New York. London: D. Appleton and Company. 1926. Pp. 444. 18*s*.

THERE can be no doubt that the author of a book which has reached its fifteenth edition has been able to provide his readers with reliable information. Once a reputation is established, however, there may be loss of efficiency unless each edition is subjected to critical revision and any necessary additions carefully incorporated. Unfortunately, in this fifteenth edition of Dr. Brundage's work, the sequence of the argument is allowed to suffer. In many instances the page reference to a subject in the index does not direct the reader to the right place in the text. Eight times the continuity of the page numbers is broken to introduce *a*, *b*, and *c*, &c., pages; a most inconvenient arrangement and probably responsible for the inaccuracy of the index. The symptoms and treatment of aspirin and luminal on pp. 60*e* and *f* are out of place and should have appeared in part two which deals with poisons alphabetically, and commences on p. 61. Toxicology has been defined as the science of poisons, and accepting this definition even in its broadest sense, it is difficult to understand the inclusion of a complete scheme of infant feeding occupying 22 pages. The author's apologia for the inclusion of the infant feeding section appears to be the possibility of a poisoned mother being unable to feed her child naturally, but this might well have been omitted and more space allotted to the important section of toxicology dealing with the post-mortem findings which is only allowed 20 pages. A number of sections in Dr. Brundage's work are very valuable. Of these the classification of symptoms which various poisons may produce and the tabulation of substances causing change of colour in urine and fæces may be cited as examples. A most useful inclusion is that of a full glossary of the composition of patent medicines. There is no doubt that Dr. Brundage's book will continue to prove of great value to those who are suddenly called to diagnose and treat a case of poisoning.

Lead Poisoning. (Medicine Monographs, Vol. VII.) By JOSEPH C. AUB and Others. From the Department of Physiology, Harvard School of Public Health, and the Medical Clinic, Massachusetts General Hospital. London: Baillière, Tindall and Cox. 1926. Pp. 265. 18*s*.

THE issue of this volume, the seventh of the series, was rendered possible by the Harvard Medical School, from funds placed at their disposal by the National Lead Institute. They were fortunate in obtaining the services of Dr. Aub and his collaborators, for their work is a notable contribution to medical science. It would be interesting to learn what is the constitution and what are the functions of the National Lead Institute. Are its members drawn from those engaged in the commercial production of lead and its compounds as well as from the scientific professions, including medicine? An institution with such a

combination of members would be of real value to the community, for conflicting interests might be freely discussed within their walls. In any case an organisation which gives facilities for the production of works such as Dr. Aub's places us in its debt.

The volume is divided into four parts, chemical, pathological, physiological, and clinical. In the chemical section the solubility of lead and its compounds in the body fluids is stressed. A good case is made out for the circulation and deposition in the tissues of lead combined with the phosphate radicle, and experimental work quoted shows that such an event is likely under the hydrogen-ion concentration normally found in blood and tissues. Analyses of organs of those who are well known to have ingested lead show that not only is the majority of lead found in the bones, but that it may be found in this situation when its detection has failed elsewhere. The pathological section attempts to correlate the clinical and pathological states and a full classification of lesions which may be found is given. In the physiological section the effect of lead on the blood cells is described in detail and the chief signs and symptoms of plumbism are discussed on a physiological basis. The experimental work here described on normal erythrocytes and artificially "leaded" cells is noteworthy. The clinical section pays special attention to the difficult problem of the early diagnosis of chronic plumbism. Administration of phosphoric acid and the limitation, as far as possible, of calcium in the diet have proved the most valuable "deleading" measure in the hands of Dr. Aub and his colleagues; they bring forward experimental work which suggests a similarity between calcium and lead metabolism.

There are two important effects of lead which receive but cursory mention—sterility and abortion. It is true that an attempt is made to explain the latter, but the much discussed question of the affinity of lead for embryonic and rapidly growing tissues, and the findings of excessive quantities of lead in the placenta of those suffering from lead poisoning are worthy of a more complete study than is here devoted to them. One sentence in this book (p. 239) should be pondered by all those concerned with industrial health. The author states: "In almost all cases of industrial plumbism and in all serious cases, it will be found that the workman has been poisoned by lead which entered his body with the inspired air."

BIOLOGY.

Biological Monographs and Manuals. No. VI. The Anatomy, Histology, and Development of the Pituitary Body. By G. R. DE BEER, M.A., B.Sc., F.L.S., Fellow of Merton College, and Jenkinson Memorial Lecturer in Comparative and Experimental Embryology in the University of Oxford. London and Edinburgh: Oliver and Boyd. 1926. Pp. 118. 12*s.* 6*d.*

AN excellent little book. As may be inferred from the title, the work is not concerned with considerations of the physiological functions of the pituitary body, but with its morphology, and contains short and clear accounts of its structure, development, and histology in the various divisions of the vertebrates. The author works through his subject from the mammals down to the Cyclostomes. We turned with great interest to his account of the conditions in Selachians, for it has been held that the organ in this group does not answer the physiological tests which are positive among other Craniata. We have no indication of Dr. de Beer's views on this particular matter, but he gives an account of the structure of the gland in these fishes which seems to put it definitely in line with the others, a fact which one would anticipate from its development. Attention might be called, however, to his statement (p. 68) of the existence of certain curious large cells in the ventral lobe, about 20 or 30 feet in diameter; a printer's error must be held responsible for this overstatement. The author brings out well the interesting and important connexion of the hypophysial pouch with the premandibular somites in some lower forms, and the consequent existence in them of representatives of "proboscis pores," although no doubt some will probably not see eye to eye with him in his deductions from the occurrences. The little work is one which every comparative anatomist and embryologist should have for handy reference. In addition to its excellent illustrations, it is completed by a bibliography which gives all the writers on the subject since the publication of Stendell's exhaustive list in 1914.

The Memory Factor in Biology. By C. J. PATTEN, M.A., M.D., Sc.D. London: Baillière, Tindall and Cox. 1926. Pp. 175. 5*s.*

THE professor of anatomy in the University of Sheffield adds a lively interest in nature, and especially in birds, to his other occupations, and he has put together out of a number of popular addresses a statement of the psychical side of his biology. Any form of dualism he entirely rejects, and he presents an elementary summary of the conception that the world is a unitary whole and that in memory of one kind and another we should recognise the immaterial part of our being. Students of Samuel Butler and his "unconscious memory" will be familiar with much that Prof. Patten has to say; his book is an edifying antidote to the dissecting room and will be of value if it stimulates its readers to dig deeper into the literature of the subject.

MANUAL OF SURGERY.

Vol. III. Seventh edition. By the late ALEXIS THOMSON, M.D., F.R.C.S. Ed. and Eng., and ALEXANDER MILES, M.D., LL.D., F.R.C.S. Ed. London: Oxford University Press. 1926. Pp. 567. 12*s.* 6*d.*

THIS third volume completes the new edition of the Manual of Surgery and, including as it does the whole of the surgery of the chest and abdomen, it forms the most interesting volume of the series. It has been brought well up to date and contains a vast amount of information; the clear arrangement which has been adopted makes access to any particular subject an easy matter. It is profusely illustrated both by photographs of actual cases and diagrams. The former illustrate for the most part rare and extreme conditions and will, perhaps, appeal more to the experienced surgeon. The diagrams are well chosen and should be of great assistance to the student in enabling him to understand the pathology of such complicated conditions as rectal fistulæ and pancreatic cysts. The volume fully maintains the standard of its predecessors.

ANATOMIE DES MEMBRES.

Second edition. By Ch. DUJARIER, Chirurgien de l'Hôpital Boucicaut. Paris: Masson et Cie. Pp. 422. Fr.45.

THIS edition is practically a reprint of the first, which has proved a success among the students for whom it was originally written. The book is of the nature of a dissecting manual, if such a name can be given to one of this size, and deals with its subject from the point of view of the dissector. It is interesting to note in this connexion that the author does not hesitate to introduce so-called "abnormalities" in his illustrations, his object being to show conditions as they may be met with in the dissecting room, rather than to confine himself to an account of the accepted type as if it were unalterable. The directions for dissection, although probably sufficient, do not err on the side of excess, but the descriptions of the regions are good, full, and clear. The illustrations are also to be commended, and in many cases show the influence of Farabeuf, some of whose actual figures are also introduced. Farabeuf, whose style of drawing was in some respects apparently derived from Vesalius, although, of course, with immense improvement, was the author's teacher in anatomy, and the book is dedicated to him.

COMPARATIVE ANATOMY OF VERTEBRATES.

Third edition. By J. S. KINGSLEY, Emeritus Professor of Zoology in the University of Illinois. Philadelphia: P. Blakiston's Sons and Co. 1926. Pp. 470.

NINE years have elapsed since the last edition of this work appeared, so that we welcome this issue. The book has increased in size considerably, and many new figures have found their way into it, but it still retains those characteristics which have made it such a favourite in the past. Prof. Kingsley is an authority on the subject on which he has written, and has produced a text-book which will be the standard one in the English tongue for many years to come. The book is beautifully produced and admirably illustrated.

Reports and Analytical Records.

CRUSTLESS CHEDDAR AND CHESHIRE CHEESES.

(WILTS UNITED DAIRIES, LTD., TROWBRIDGE, WILTS.)

THESE cheeses are stated to be made from full cream milk. Packet cheeses are imported which are described as of Cheddar flavour, whereas the products of the Wilts United Dairies claim to be actually Cheddar and Cheshire cheeses. The method of packing each of the six sections in a box in "silver paper" prevents contamination. Both cheeses possessed an agreeable and pleasant flavour characteristic of their types. On analysis the following results were obtained:—

	Cheddar.	Cheshire.
Weight of each section	35·6 grammes.	37·4 grammes.
Moisture	44·1 per cent.	43·5 per cent.
Total ash	3·06 ,,	3·24 ,,
containing salt (NaCl)	1·17 ,,	1·23 ,,
Protein	22·06 ,,	22·06 ,,
Fat	27·84 ,,	27·00 ,,
Lactic acid	1·40 ,,	1·40 ,,
Undetermined	1·54 ,,	2·80 ,,
Calorie value per lb.	1586	1551
Preservatives	Absent.	Absent.

The absence of sugar is of some significance for diabetic patients.

"TABLOID" DIGITALIS LEAF (GR. ½).

(BURROUGHS WELLCOME AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

In THE LANCET, Oct. 24th, 1925, we called attention to "Tabloid" Digitalis Leaf (gr. 1). This has proved such a satisfactory and efficient means of administering the drug, that Messrs. Burroughs Wellcome and Co., in order to meet the demands of medical practitioners who wish to employ smaller doses, have now prepared tabloids containing half-grain doses (0·032 gr.), put up in bottles of 25 and 100.

CROMESSOL.

(CROMESSOL COMPANY, 140–148, BRAND-STREET, IBROX, GLASGOW S.W.)

We have received a sample of this pleasantly scented disinfectant and germicide. The basis of the preparation is formaldehyde, but essential oils which enter into its composition ensure that the pungent characteristics are considerably modified. Used according to directions and with the fine spray supplied by the Cromessol Company, offices and buildings can be quickly filled with a vapour which should effectively prevent the growth of noxious germs. The claims made for the preparation are entirely based on its protective value. Cromessol is prepared with the eau de cologne, verbena, lavender, and other essential oils and the preparation, which can also be used in the bath, does no injury to fabrics. Tested against 24-hour cultures of *B. typhosus* and *B. diphtheriæ* under similar conditions the disinfectant has been found to possess the germicidal power of standard carbolic acid solution, while the growth of *B. anthracis* was greatly inhibited. The effect of spraying upon vermin was marked; lice do not live more than six hours after being sprayed.

CREO-TERPIN COMPOUND (WAMPOLE).

(MESSRS. H. K. WAMPOLE AND CO., PERTH, ONTARIO. AGENTS: MESSRS. FRANCIS NEWBERY AND SONS, LTD., 31–33, BANNER-STREET, LONDON, E.C.)

Each fluid ounce of this preparation contains chloroform 1 min., terpin hydrate 4 gr., creosote purified 4 min., calcium glycerophosphate 4 gr., and sodium glycerophosphate 4 gr., with 26 per cent. of alcohol. The action of the compound is expectorant and deodorant. Used in bronchial complaints it is claimed to check cough and render the secretion less tenacious, while appetite tends to improve. Medical men may like to see how far these valuable actions would assist in the treatment of troublesome symptoms associated with asthma, whooping-cough, and catarrhal conditions of the respiratory tract. The compound is put up in 8 oz. and 16 oz. bottles, the suggested dosage being, for adults, one to two teaspoonfuls every three or four hours well diluted with water, and for children, according to age, from ten drops to half a teaspoonful. In coughs of a spasmodic or irritating nature, it is recommended that the dose should be held in the throat for a short time or used as a gargle before swallowing.

ALLISATIN TABLETS.

(SANDOZ CHEMICAL CO., LTD., PHARMACEUTICAL DEPT., BRADFORD.)

These tablets are a method of administering allium sativum in which the odour and flavour of the garlic have been got rid of by treatment with vegetable charcoal. It is claimed that, whereas other preparations of garlic present only a comparatively small quantity of some of the constituents of the plant, these tablets, each one of which contains 15 gr. of the fresh drug, employ the total sulphurous principles. There is good evidence that garlic is of service in gastro-intestinal affections, and a recent paper in the *Münchener Medizinische Wochenschrift* assumes this to be acknowledged, and, in particular reference to Allisatin, enumerates cases where improvement has followed its administration, while admitting the action of garlic to be not easily explained. Preposterous claims have been made for garlic with the result that its sensible indications may have been overlooked.

(1) NORMACOL; (2) NEO-REARGON.

(H. R. NAPP, LTD., 3–4, CLEMENTS INN, KINGSWAY, LONDON, W.C.)

"Normacol" consists of desiccated plant-mucus in combination with a small proportion of frangula glucosides, a crystalline glucoside extracted from the alder buckthorn, whose laxative properties are recognised. Administered in the treatment of constipation, the action of the drug is clearly intelligible. Owing to the property of expansion which the desiccated plant-mucus possesses, the effect is to expand the intestines and thereby lead to a defæcation reflex, while the glucoside is present in a proportion not sufficient to create an evacuation of the bowels, but sufficient to assist in the general action. There is no chemical irritant included, and the clinical tests suggest perfect safety for the administration of suitable doses to adults or children.

"Neo-Reargon" is a compound of anthraquinone glucosides and silver in ionised form, designed for the treatment of gonorrhœa of the anterior urethra in either acute or subacute form. The treatment is free from irritation, and with the absence of painful symptoms it is possible for the surgeon to proceed rapidly in an established case or to attempt an abortive result. Charts showing the strength of solution required in the various indications will be supplied to the medical profession, many of whom, we are informed, displayed much interest in the product at the recent London medical exhibition.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 27, 1926.

PLUMBISM AND ITS AVOIDANCE.

THE Lead Paint (Protection against Poisoning) Bill has been debated as though the choice lay between regulating the use of lead paint and prohibiting it altogether. Prohibition is a policy unlikely to be adopted by the present Parliament without prolonged controversy. The choice may, therefore, be otherwise stated; it lies between obtaining regulation before Christmas and obtaining no legislation on the subject at all for some time. It has been said that the prohibition of lead paint in this country would reduce painting work by 40 per cent., and the Government is naturally loth to disturb industry or to increase unemployment unless it is absolutely necessary. It undertakes, however, to bring in a Bill to prohibit lead paint if the proposed regulations fail to give the protection now hoped for, meanwhile asking that the regulations be given a trial. The Bill gives some idea of the scope of these regulations. They may, where buildings are being painted, prohibit the use of any lead compound except in the form of paste or paint ready for use; they may prohibit dry rubbing down and scraping; they may deal with the danger of applying lead paint in the form of spray; they may provide for periodical medical examination and for the non-employment of persons whose health appears likely to suffer; they may secure washing facilities for painters both during and after work; and they may provide for protective clothing and the distribution of instructions as to the hygienic precautions to be taken. Finally, Clause 2 of the Bill, following the Geneva Convention, prohibits the employment of women and children in the painting of any part of a building with lead paint, on the grounds that in the case of women there is a greater susceptibility to lead poisoning, more rapid intoxication, and graver racial consequences. Politically the exclusion of women is resented by the advocates of sex equality, though similar exclusions have been upon our statute-book for 35 years and though two fresh instances were enacted in 1920 without evoking much protest. The other opposition to the Bill comes partly from those who do not wish to see any further interference with industry by Government departments, but mainly from those who will not accept mere regulation of an industrial risk which, they say, should be altogether abolished. They demand the prohibition agreed upon by the Geneva Convention and will not accept the half-loaf now offered. Mere regulation, they consider, can never safeguard the ordinary house painter who works in private dwellings either by himself or in small groups and thus cannot be subject to adequate official inspection. Britain, they say, agreed to prohibition at Geneva and she must not dishonour her signature; the country which has led the world in welfare legislation must not turn reactionary now. The defenders of the Bill reply that there was no signature to dishonour, and that this country in no way bound itself to any course of action; they believe that regulation can make the industry reasonably safe. Trade-unions will tell their members of the risks and the prescribed precautions, and medical examination will play its part in detecting the onset of disease. Medical science is thus expected to answer two main questions: Can any—and, if so, what—regulations sufficiently protect the lead paint worker? and Have women a special susceptibility to lead? In another column (p. 1132) we summarise some of the evidence on these two questions.

Some industries have had experience of the value or otherwise of regulations, though the statistics as to lead poisoning in the potteries are being freely used by both sides. According to British experience, white lead manufacture, work in potteries, and metal smelting seem to carry a graver risk of plumbism than painting, and it appears that in any lead trade the chief danger is from dust or fumes. Many authorities, especially in this country, consider that lead enters the system chiefly through the respiratory tract. Others regard the digestive tract as the principal channel of entry, and it has been stated that experiment shows that whereas only 12 per cent. of lead dust enters the lungs, about 70 per cent. enters the digestive tract after settling in mouth or nose. "Whatever be the truth," as the International Labour Office [1] says, "this discussion, from the practical point of view, is of only secondary importance, the campaign being really waged against the great enemy—dust." How, then, does lead affect workers in paint? The painter using paint already mixed incurs only the slight risk of ingesting small amounts of lead—e.g., from his paint-smeared fingers. But if he uses sand-paper on painted surfaces by the dry process, he inhales large quantities of dust. The regulations prohibit this dry process, and their supporters expect much from this provision. The Bill does not, however, specifically guard against the inhalation of lead oxides when the workman burns off paint with a blow-pipe, which is regrettable since inhalation of small amounts of insoluble lead compounds may be very dangerous. It is, indeed, a characteristic of lead that it acts in very small doses. The amount required to set up chronic plumbism has been estimated as low as 1 mg. of dust inhaled daily, and 10 mg. sets up severe symptoms in a short time, though there is reason to think that animals and human beings may acquire a tolerance under certain conditions. American and German research shows that lead compounds, inhaled and ingested, are stored as an insoluble phosphate in the skeleton. This may be gradually mobilised and excreted, and in passing through the blood stream may produce toxic symptoms. Detailed analyses of human tissues have proved that workers in dusty lead trades may have from 0·5 to 1·0 g. of lead phosphate in the skeleton. In the course of a speech against the Bill in the House of Lords on Nov. 18th, Lord DAWSON referred to the use which could be made in industry of a biochemical test for the susceptibility of individuals to lead and the degree of poisoning reached, and there is no doubt that if so dangerous a substance as lead is to be employed at all the workers ought to be frequently and carefully examined, not merely for crude paralyses but for slight deviations from health. The Government describes its proposals as an experiment, and it is an experiment that will only succeed if employees are kept under thoroughly efficient medical supervision. The Government's opponents describe the experiment as gambling with men's lives, but as we have pointed out, the choice at present appears to be between the regulations and nothing, and it is gambling with lives to leave things as they stand. The Government has given its pledge to introduce prohibitive legislation if the present regulations fail and in the meantime it would be well to accept substantially

[1] International Labour Office, 1926. Brochure No. 54: Lead Poisoning.

what is offered. It is regrettable that the system of control rather than prohibition will involve further inspection and State interference with an industry, but an element of compulsion does not necessarily exclude the education which is the only satisfactory basis of industrial hygiene. Education should be all that is needed, for it is to the interest of everybody —employer and employee—that poisoning should not occur. The continued existence of the problem, however, seems to show that education requires temporary reinforcement.

The attempt to prevent women from working with lead paint has given rise to much controversy. The argument that women (or men) can be left to look after themselves is unconvincing; if it were accepted it would mean that the State should never introduce legislation governing the conduct of factories; it ignores the unpleasant fact that many workers in this country to-day are forced by circumstances into certain forms of employment whether injurious or not. The Government's proposal to exclude women suggests a lack of faith in the new regulations as a safeguard against lead poisoning. Granted that a considerable risk is still being run the exclusion is based on (1) the higher susceptibility of women, (2) the graver effects of poisoning in women, and (3) the danger of lead producing abortion or the early death of children. Evidence on each of these questions will be found in the special article referred to. There is no doubt that the older statistics on lead poisoning in women are largely fallacious because women were given the most dangerous jobs in the industry and were badly paid and underfed. The International Labour Office [2] states that "while English opinion inclines to the view that women are more susceptible to the action of lead than men this is not accepted by German writers who consider that their poor state of nutrition, poverty, industrial fatigue, added to housework, long hair, and type of clothing favouring the accumulation of a greater quantity of the poison upon them, are sufficiently potent factors to account for the apparent disparity. Data from the United States are not sufficient to allow the experts to support either of these views. All, however, agree that in women lead poisoning assumes a more severe form. . . . than in men." This is a very important fact; but when supporters of exclusion speak of the effect of lead on female fertility they are certainly not on sure ground, for chronic poisoning of the father appears to be almost as damaging to the ovum as chronic poisoning of the mother. Lord HALDANE will have sympathy for his plea for further medical guidance on this question before rash assumptions are made. The general admission that lead poisoning does more damage when it affects the female is a sufficient ground, perhaps, for excluding women from the industry as at present conducted, but the new regulations will be a failure unless they make the work reasonably safe both for men and women.

ACUTE POLIOMYELITIS.

ACUTE poliomyelitis is regarded with particular anxiety by the physician, for he cannot say, in a given case, whether the crippling and disabling sequelæ will make their appearance in a mild or in an aggravated form, and cannot determine from the prodromal symptoms whether involvement or escape is to be the upshot. No clear relation has as yet been established between the mildness or otherwise of the initial syndrome and of the paralytic consequences, so that the knowledge that the cases in which the latter develop actually constitute the minority is but cold comfort. Unfortunately there is a clinical type, also, in which the early febrile symptoms are so trifling as practically to escape notice, amounting in some instances to nothing more than a headache; the fulminant onset of paralysis in some such cases exemplifies the serious nature of the disease's uncertainties. Again, even when invasion of the lower motor neurones, restricted or widespread though it be, is clinically obvious, prognosis as regards recovery cannot readily be estimated by any known criteria, for the residual incapacity bears no constant relation to the severity of the symptoms during the first few days. If such means as we at present possess for a rational treatment of epidemic poliomyelitis are to be of any service, it is clearly imperative that the condition should be diagnosed in the pre-paralytic stage—during those precious two or three days that in the great majority of cases supervene between the febrile onset with malaise and the revelation of lesions in brain or cord by paretic or paralytic symptoms. When epidemic disease of whatever kind is raging the profession and the public are on the alert, and there is considerably less likelihood of abortive and incomplete cases being missed; in respect of poliomyelitis at the present time we may believe that an attitude of watchful and solicitous care has been adopted by all whom it concerns. To diagnose the disease at the earliest, the following considerations are apposite. As a rule the illness is not so severe or so obvious as to "fell" the child and make it take to its bed at once. With a moderate rise of temperature, headache, sickness, malaise, possibly with mild catarrh or throat symptoms, there is no outstanding clinical feature to suggest any one infective condition rather than another; should spontaneous pains be complained of, in neck, back, or limbs, with or without a corresponding hyperæsthesia, the indications point more specifically to irritative phenomena on a meningeal basis. Lumbar puncture must in any and every case of this kind be performed at once if suspicion is aroused; by fluid examination varieties of meningitis can be differentiated from poliomyelitis, and the latter can be distinguished by the increase of cells, which is a constant feature of this pre-paralytic stage, by normal glucose and chlorides, and by little or no protein change. The cells vary from, say, 30 up to many hundreds per c.mm., some 60 to 90 per cent. being polymorphonuclear. A fluid finding of this kind, with absence of organisms, is highly suggestive of acute poliomyelitis, and much less indicative of epidemic or lethargic encephalitis, since in the latter the polymorphonuclear element is almost entirely absent from the cytology. Finally, in this connexion, the pre-paralytic period is signalised by diminution or loss of the deep reflexes in many cases, sometimes as long as 24 hours before actual paralysis is detected.

Should the application of these considerations to a particular case enable the observer to make an accurate diagnosis, the sole *specific* treatment consists in intraspinous injection of immune serum, a method which has been used with success in previous epidemics. To obtain this serum is the difficulty. It is known that an attack of poliomyelitis confers immunity on its subject for years, and that the patient's serum remains active against the disease for a very long time. But how, as a matter of practical therapeutics, can the physician find a convalescent or an old case at hand, the patient being willing to give the necessary blood, precisely when an acute case of poliomyelitis

[2] Ibid.

in the pre-paralytic period presents itself for immediate treatment? If this difficulty can be met, the procedure is simple enough; the serum is separated from, say, 30 c.cm. of the giver's blood, obtained by venepuncture, warmed, and injected into the spinal theca by the lumbar route in amount corresponding to the quantity of fluid withdrawn—say from 4 to 12 c.cm. This treatment can be repeated daily for some days. It is useless except when employed before the paralysis has set in definitely, or in cases of a progressive ascending character. Efforts have been made by many workers to obtain varieties of animal sera which have been appropriately treated so as to contain actively immunising bodies, but as yet the results have been uniformly disappointing. One of the great difficulties, as FLEXNER and AMOSS[1] have emphasised, is that only two varieties of the virus of poliomyelitis have as yet become known; one is too weak to excite any reaction in the experimental animal, and the other is so strong as to induce severe paralytic effects in the monkey. Artificial attenuation of the virus must somehow be effected before further advance can be made. No medicinal agent hitherto has been proved to exercise a beneficial influence on the course taken by the disease, but much can be done to minimise the ultimate sequelæ by insisting on absolute rest in bed, at least for three weeks, and by concentrating on the muscles that are affected. What the physician must aim at is to obtain the "zero position" for them—i.e., that position in which a given muscle is completely relaxed and its opposing muscle is prevented mechanically from exercising its action, by appropriate splinting or the use of plaster "shells." If weak muscles are placed in a position of relaxation from the outset, many of the deformities of the later stages will be effectually prevented. Individual thought is obviously required for each case, but the principles are the same in all—no loading or stretching of an atonic muscle is to be allowed. Bearing in mind the spinal site of the lesions, the physician will utilise all available means to maintain the nutrition of the affected muscles until such time as recovery takes place from within. Hence there is a place in his therapeutic scheme for the employment of warmth to the limb or limbs, skin friction, warm baths and douches, and gentle massage and movements; the former should be carried out from the beginning, the latter after the first week or two are over. Electrical applications of a stimulating kind are probably less advantageous than is commonly supposed, and in any case are not called for at the early stage.

The incubation period of poliomyelitis has been determined within the range of from four or five days to ten or twelve. Being infective if not infectious it requires that isolation should be adopted; according to the experience of many observers, in a hospital bed-isolation suffices. The virus has been found in the nasal, buccal, and pharyngeal mucous secretions both of patients and of contacts and others who have exhibited no nervous symptoms and sometimes no general symptoms. It is a good plan, therefore, for the practitioner to insist on regular nasal and throat douching or gargling with washes of potassium permanganate or some variety of chlorine-containing solution, on the part of contacts and patients alike. The evidence of the spread of infection by schools is certainly not strong, just as that of spread through a ward of a general hospital is for all practical purposes nil. In one of the Massachusetts epidemics only 35 patients out of 150 cases were attending school, and of the 35 no less than 22 attended different schools. The occurrence of the disease in institutions is as a fact extremely rare. In view of what was said above of the incubation time, a quarantine of a fortnight before contacts return to school should be sufficient. More difficult to evaluate is the period at which infected patients may be considered free from infection. Possibly the virus remains in the mucosæ for months. Those cases which recover quickly are perhaps less serious in this respect; one month at least should elapse after convalescence is complete ere the patient is allowed to resume his place at school. The view here adopted was well set out 15 years ago in a paper by the late Dr. F. E. BATTEN, communicated to the Association of Medical Officers of Schools.

[1] Journal of Experimental Medicine, 1924, xxxix., 625.

FOG AND MORTALITY.

WE publish elsewhere in this issue an interesting study by Mr. W. T. RUSSELL, from the Medical Research Council's Statistical Department, of the arithmetical relation between temperature and fogginess on the one hand and mortality from respiratory disease on the other. This paper well illustrates both the strength and the weakness of the statistical method in such problems.

The strength of the method resides in this, that it enables one to give a *rational* answer to the sort of question we are always asking. We are all of us, medical men and laymen, prone to seek some numerical answer to such questions as—How many lives would be saved annually if tuberculosis were conquered? How many lives are saved annually by the reduction of infant mortality?—and in this class of question one directed to the numerical saving of life to be attained by a less barbarous utilisation of fuel is often to be found. But the common way of answering such questions is somewhat crude. It consists in comparing the mortality over a period when the factor whose influence we desire to measure is operating intensely, either with some average mortality or with the mortality in some other period when these factors were less in evidence. Thus we find the greatest of medical statisticians, WILLIAM FARR, writing: "The effects of the cold of the five weeks that ended on 19th of December (1874) have been tested in the same way by comparing the deaths at each age with the deaths in the five previous average weeks. The deaths were raised from 6967 to 9871; so the excess due to cold was 2904 in the five weeks, and on an average 581 weekly." FARR—who was fully alive to the many statistical difficulties, indeed he said that any investigation which "is confined in its scope to *mean* temperatures must be imperfect"—would have been the first to admit that this is too summary a way of assessing damages. The modern statistical calculus provides a better measure. Mr. RUSSELL did not have to confine himself to contrasting particular periods; he could measure the average relation. While to obtain a numerical assessment of the damages chargeable to fog and temperature, his equation which tells us how much for each fall of a degree of temperature below the normal for season or for each unit change in the measure of fog the number of deaths will be altered. For instance, in his most favourable case, the deaths of the nineteenth week of the year related to the temperature and fog of the previous week, a change of one degree of mean air temperature corresponds to an increase or decrease of nearly 2 deaths (almost 5 per cent. of the mean mortality in the two boroughs studied) and one unit change in the fog standard corresponds

to 0·25 deaths. Nor is this a mere formal relation, because, as Mr. RUSSELL points out, given the temperature and fog measure of one week, it is possible to make an appreciable closer estimate of the mortality in the following week than if we have not that information.

These considerations show the strength of the method. Its weaknesses are not less apparent. In the first place, as Mr. RUSSELL clearly points out, and as FARR noted 60 years ago, the numerical measure of temperature is very imperfect, while the measure of fogginess is even more open to criticism. In the second place, equations are good servants but bad masters. With the equations provided by Mr. RUSSELL, the injudicious might reach very surprising conclusions. They might conclude that in the fourteenth week of the year fog was a positive benefit to health, the more of it the fewer the deaths, or, worse still, they might conclude that warmish weather with thick fog was much healthier than cold weather with no fog at all. We are not prepared indeed to say that this statement is *certainly* false (we believe it is false), but only that the equations do not demonstrate it to be true. All they amount to is a summarisation of experience over a comparatively narrow range of physical conditions, and to suppose that they hold good beyond the range of observation would be as rash as to expect any interpolation formula to be valid beyond the range of observations; if it were, anybody could be a successful prophet. We may, perhaps, regard it as proven that (1) temperature and mortality from respiratory diseases are substantially correlated; (2) that fogginess and mortality are also correlated, but that the latter relation cannot, upon the present data, be demonstrated to be so close. Rightly to appraise the relative weights of these two factors is impossible without a more precise measure of "fogginess," and, indeed, a differentiation of the various physical types of fog. Such information was not available for the period taken by Mr. RUSSELL, and, since 1890, the return of influenza has greatly complicated the statistical problem. Hence it is probable that it will be long before statisticians can give an answer to the question—What does fogginess cost in lives?—which is not only *rational* but *exact*. We may even hope that, before the statistician has sufficient data to give the answer, urban fogginess will have been abolished on general principles, for the cumulative effect of the evidence that fog is indeed an unmixed evil is overwhelmingly great.

DONATIONS AND BEQUESTS.—Miss Mary Scott Mouat, of Lanthill, Malvern Wells, left £1000 to the Royal Manchester Children's Hospital for the endowment of a bed "in memory of her sister Margaret."—Mr. Arthur Donald Oates, Halifax, left £1000 to the Royal Halifax Infirmary.—Mr. Thomas Oxley, Blackpool, who left estate valued at £32,107, gave £1000 each to the National Institute for the Blind, Great Portland-street, the Y.M.C.A., Sheffield, and the Sheffield Cripples' Aid Association, and, after other bequests, the residue of the property, which will amount to about £20,000, to the Sheffield Royal Infirmary.—Miss Edith Jameson Robinson, Dawlish, Devon, left £1000 each to the Dawlish Cottage Hospital and Dr. Barnardo's Homes.—Messrs. Bourne and Hollingsworth, London, have given £4000 towards the Reconstruction Fund of the Middlesex Hospital as a mark of appreciation of what the Middlesex Hospital does for the benefit of workers in their immediate neighbourhood and for their own employees.—Miss Rachel Pennywick, of Craigie, Perth, besides other bequests, left £1000 each to Perth Royal Infirmary and the Elgin Hospital, and £200 each to Burghmuir Infectious Diseases Hospital, Perth; Hillside Sanatorium, Perth; Friarton Fever Hospital, Perth; and Perth Children's Day Nursery.—Under certain conditions and subject to his wife's life interest, the late Mr. Henry Edwin Fraser, of Glen Albyn, Station-road, Hendon, N.W., left £1025 to Middlesex Hospital for the endowment of a bed.

Annotations.

"Ne quid nimis."

DOCTORS AND STATESMEN.

THE annual dinner of the Royal Society of Medicine on Nov. 18th was marked by three interesting events. One was the presentation of the Society's gold medal to Mr. J. S. Haldane for his great services to medicine and science. The second was the gift of a seventeenth-century gold chain by Sir StClair Thomson, to be worn by the President as his badge of office. The third was the presence of the Rt. Hon. Stanley Baldwin as guest of the evening. The Prime Minister took advantage of the toast of "The Society" to make a happy speech on the similarity between the functions of medicine and statesmanship. Both professions, he said, owe a profound debt to the Greeks; the common goal of both is the attainment of perfect health and normal balance of function. Both deal with an infinitely complex assembly of growing structure, never at rest, and subject not only to distemper but to disease. Both suffer from plenty of quacks and charlatans, who seek to heal the sick by reciting magical formulæ which they call "slogans," and physician and politician alike are apt to have trouble with those members of their callings who either will not or constitutionally cannot keep out of the Press—a rash that appears on the most unexpected persons. Both are subjected to the attacks of those who differ from them. Mr. Baldwin, however, gave to the doctors the advantage in that they do sometimes receive emoluments appropriate to the confidence reposed in them by the public. They have sometimes, too, he said, the inestimable advantage of seeing the results of their work, and those who rise up and call them blessed are beyond all enumeration. For the politician there is only the laying of foundations for generations ahead, and the land he would see is as the hills that are very far off. The temperature of the body politic varies almost as rapidly as temperatures measured by the clinical thermometer. Last May it might well have reached 105°, and there are still symptoms of fever, due to attacks of a very virulent epidemic that the Prime Minister ventured to diagnose as "Russian influenza." Epidemics tend to become less severe as time goes on, but until that disease diminishes in strength or some vaccine to produce immunity is found, he could promise us no relief from intermittent fever. The body politic needed, he said, a Harvey to find out the mysteries of the cyclic ebb and flow of unemployment, but the surgeons, who would operate on the House of Lords as on an appendix, were in his opinion less necessary than physicians.

Sir James Berry said "Happy is the nation that has no history," but went on to indicate that the Royal Society of Medicine may be called a happy nation, or, as the Prime Minister said, an Empire, while its history is of great interest. He referred in appropriate terms to the recent development in the *Proceedings*, and went on to mention the many improvements which have been carried out in the building and equipment during the last twelve months. Sir James Berry dwelt on the ideal to extend the services of the Society to the poorest practitioner, but uttered a serious warning against a too great prevalence of operating. The extension of the already remarkable library facilities, he said, is an earnest of what the Society will accomplish if it gets adequate support, but it is at present hampered by a capital debt of £25,000. Donors, as Sir James Berry said, are attracted to the laboratory, but the research work performed in the Society's library should not be underestimated. Dr. Robert Hutchison, in proposing the health of the guests, continued the Prime Minister's analogy by coupling him with the medical profession under the late Lord Salisbury's encomium of a "great social cement." Sir William

Bragg pointed out in his reply that physicians and physicists had always lived in the closest of alliances, and that when the Royal Society was first founded the physicians of London had been the keenest participants in the exciting early discussions. Sir Berkeley Moynihan, who also replied to the toast, urged it as vital that the medical profession should keep constantly in view their duty of maintaining intimate touch with the lay public and of fulfilling their obligations as citizens, which they did not lay down when they qualified. However the medical profession fails to reach its ideals, it continues to pursue them ardently, and ideals are, he said, not so much for capture as for pursuit. The whole of Sir Berkeley Moynihan's witty speech, in which he made constant happy references to the whimsical fantasies of "The Mikado," was directed to show the necessity that doctors, who in the war had displayed great administrative gifts, as well as technical skill, should in times of peace play a similar part in coöperation with public efforts.

CUTANEOUS XANTHOCHROMIA.

IN 1913 H. van den Bergh, while making investigations on the different pigments in blood serum, drew attention to xanthosis in diabetics and recognised the lipochromic nature of the pigment on which it depended. A little later, Labbé described under the name of xanthochromia palmoplantare an intense yellow coloration of the palms and soles met with more or less frequently in cases of diabetes. His conclusions, after laborious experiments, tended to exclude cholæmia as the cause of the coloration, there being no excess of bilirubin in the serum or urine; the colour seemed attributable to a different pigment of unknown nature. Xanthochromia is observed especially in diabetes and mostly in severe forms of this disease. On the other hand, it may be present in many other affections, such as typhoid fever and in subjects showing the marked disturbance in nutrition which often precedes diabetes. Subsequently Labbé and his pupils conceived the idea that a high cholesterol content of the blood might explain the pigmentation; but they found, after diligent investigation, that xanthochromia did not coincide invariably with hypercholesteræmia, being relatively much less frequent. In fact, conditions of increased cholesterol content are found without there being the least sign of xanthochromia. Thus a marked condition of hypercholesteræmia has been described in various forms of nephritis—precisely in those which are associated with lipoidosis and cholesterinosis of the kidney—and in the course of many hepatic disorders, such as cholelithiasis, Weil's disease, obstructive jaundice, acute yellow atrophy, cirrhosis and cancer of the liver. In tuberculosis, especially when of long standing and with amyloid degeneration, there may be hypercholesteræmia, as also in severe forms of anæmia, and in syphilis, chronic alcoholism, and arterio-sclerosis. Among physiological conditions characterised by constant hypercholesteræmia are pregnancy, the menopause, and, to a slighter degree, senility. Yet in none of these conditions with a constant more or less high blood content of cholesterin is there a concomitant xanthochromia. Dr. V. R. Peretti, of the University of Naples, has recently published[1] some investigations on the subject which are of interest. It is known that the pigment which colours the serum is a lipochrome, lutein, a complex hydrocarbon of the aromatic group; it may be estimated in the blood by van den Bergh's method. Dr. Peretti made observations on 17 cases, and found that seven were diabetics, with xanthochromia, cholesteræmia and lipochromia; five were diabetics without xanthochromia or lipochromia, but with cholesteræmia only; two were obese subjects not diabetic, but with acidosis, xanthochromia, and lipochromia; and three were rare and spurious cases of xanthochromia and lipochromia in patients who were not diabetic and had no cholesteræmia. It will be seen that in these seven cases lipochrome bore a definite relation to the xanthochromia and was associated with a high cholesterol content; yet hypercholesteræmia occurred also in the five cases in which there was no xanthochromia. Moreover, it appears that the lipochrome content varied proportionately to the intensity and extent of the xanthochromia. A priori, therefore, it must be admitted that xanthochromia is due to the accumulation of lipochrome in the blood and tissues. This conclusion is confirmed by the three spurious cases, in which there was xanthochromia without diabetes or cholesteræmia, in whom lipochrome was also found. As regards the origin of lipochrome, van den Bergh found by experiments that it was possible to vary the amount of it in the blood by giving substances alternatively rich or poor in such pigments; he isolated and called carotin and xanthophylla, pigments contained in carrots and green vegetables, and present as lutein in egg-yolk, where they, apparently, facilitate the combustion of fats. Dr. James Oliver has recently called attention[2] to carotin in the blood-serum as a probable halogen-carrier. But the importance of diet in explaining lipochromia—however easily assumed and suggestive—does not carry full conviction, since it is a matter of daily observation that not all diabetics who are on a largely vegetarian régime, nor the tuberculous, who eat large quantities of eggs, show signs of xanthochromia. The lipochrome introduced into the organism does not remain there passively or indefinitely, but is either destroyed internally or eliminated by the excretions, and the conclusion which this suggests is that the essential cause of xanthochromia is to be found in the patient's incapacity to get rid of the ingested lipochrome by excretion or destruction. Dr. Peretti lays the blame on faulty general metabolism, and in favour of this cites the fact that diabetics with severe and extensive xanthochromia show a marked disturbance in fat metabolism, a defect in the combustion of the ketonic fatty acids, and an accumulation of cholesterol. In the same way xanthochromia is met with in the obese, who, although not diabetic, present an almost chronic acidosis, indicative of inefficient fat metabolism. The most satisfactory conclusion to be drawn from all this evidence seems to be that xanthochromia palmoplantare should be considered as a phenomenon of purely clinical interest, since it has no serious prognostic significance.

[1] Gazzetta degli Ospedali e delle Cliniche. No. 41. Oct. 10th, 1926.

THE 1924 OUTBREAK OF ENCEPHALITIS IN SHEFFIELD.

THE last plague to escape from Pandora's box has proved in some ways to be the worst, although, in the Report[3] before us, Prof. F. E. Wynne says that statistical estimates of the fatality of epidemic encephalitis should be accepted with reserve owing to the occurrence of unrecognised mild and abortive cases. The main features of the Sheffield outbreak of 1924 have already been set out in our columns, and this Report contains the considered opinions of epidemiologist, pathologist, and clinician upon its lessons. Prof. Wynne is unable to establish any relation between the disease and social conditions, such as overcrowding, poverty, or insanitary housing, nor any relation with site, water, milk or food-supply. There is no trustworthy evidence that it is spread by direct contact nor any data for computing an incubation period. The only positive evidence concerns the greater liability to infection in males and the greater liability to die of the disease in females. Prof. J. S. C. Douglas's pathological report is brief, for the results closely corresponded with those found in other outbreaks. In the clinical report by Prof. A. J. Hall and Dr. A. G. Yates the difficulty of diagnosis is emphasised, for 16 cases notified as epidemic

[2] Med. Press and Circular, Nov. 17th, 1926.

[3] Medical Research Council. Special Report Series No. 108. The Sheffield Outbreak of Epidemic Encephalitis in 1924. H.M. Stationery Office. 1926. 1s. 9d.

encephalitis proved to be suffering from some other condition. Although about one-half of the cases notified could be described as mild, with a tendency towards complete recovery, Parkinsonism was found not infrequently to follow an attack of extreme mildness. Ocular palsies persisted rarely, although an occasional speech difficulty remained for considerable periods. Mental disorders persist in half the cases in which they were acute in the primary attack. Sleep disorder tended to chronicity, in many cases taking the form of nocturnal insomnia. The occurrence of moral changes during the primary attack was too difficult to assess, so long as the patients were in bed under strict nursing supervision, to afford material for report. Respiratory disorders in the primary attack did not persist in any case. The time of onset of Parkinsonism was most commonly from 6 to 12 months, the facial mask appearing early. Five out of 64 cases so affected have died already, while of the remainder a considerable percentage is getting steadily worse; about half seem to be at a standstill. Of the 43 patients with encephalitis who did not survive, 40 died within two months of onset, two of pneumonia several months later, while one boy died eight months after a mild primary attack of what appeared to be a recurrent acute attack with profound lethargy. An appendix to the Report contains a summary of recent researches by Dr. J. R. Perdrau from the National Institute for Medical Research at Hampstead. Dr. Perdrau's study of immune reactions in the rabbit confirms the contention of Levaditi and others that the causal agent of encephalitis is identical with that of herpes febrilis, except in regard to the greater affinity of the former for the central nervous system. He admits that the theory of herpetic origin has not been universally accepted by research workers, although no other theory has so far been propounded on experimental grounds.

PROLAPSE AND CARCINOMA.

SOME recent reports of the occurrence of carcinoma in a prolapsed uterus only serve to show how surprisingly rare the condition really is. Last March Dr. H. Leith Murray, giving the history of a case[1] to the North of England Obstetrical and Gynæcological Society, said that he had been able to find only one instance of carcinoma with prolapse recorded in the journal of *Obstetrics and Gynæcology of the British Empire*. This was described by Dr. Russell Andrews in 1910 and had something in common with his own, for in both the history of protrusion at the vulva was only recent; in Dr. Murray's the cervix had bled freely ever since its appearance. Before the same society on Oct. 15th Dr. J. W. Bride gave an account of two cases in which prolapse was associated with malignant disease. In the second of them the lesion was a primary carcinoma of the vagina which, he said, might possibly have been caused by neglect of a rubber ring pessary worn during the previous five years. The first case, however, was one of cervical cancer, where no pessary had ever been worn.

The patient was a woman of 50 who had had six children, the last of them ten years ago. She consulted Dr. Bride in June, 1921, complaining of a bad discharge, brownish and watery, and of something coming down. On examination it was found that she had a complete prolapse with hypertrophy and severe ulceration of the cervix. At operation on June 10th, 1921, though the cervix did not seem to be definitely malignant, Dr. Bride removed the uterus by vaginal hysterectomy in the course of an extensive anterior colporrhaphy according to Fothergill's method. The pathologist reported that there was a columnar-celled carcinoma of the cervix and the patient made an uninterrupted recovery. In April, 1925, she returned complaining of a small ulcer on the right labium majus, which had first been noticed in the previous December. The vulva and glands were excised on April 8th and microscopical examination showed epithelioma of the vulva. Recurrence took place at the end of that year and radium was applied on two occasions. She died about three months ago.

Discussing this history, Dr. Bride said that he thought that the association of the columnar-celled cervical carcinoma and the vulval epithelioma was almost certainly fortuitous. At any rate, it appears irrelevant to the question whether prolapse predisposes to cancerous change. In looking at this question it would be reasonable to suppose that a protruded cervix, constantly subject to irritation, would stand a good chance of becoming malignant, but, as Dr. Bride pointed out, authorities such as T. S. Cullen and G. Panton have been able to collect so few cases that they could only regard the coincidence of prolapse and cancer as accidental. There is no doubt that childbearing predisposes to carcinoma of the cervix, and the most generally accepted explanation of this fact is that the laceration so often caused in labour becomes the seat of a chronic inflammation, and this is the starting-point of a new growth. The irritation thus caused can rarely be so great as that suffered by a cervix projecting at the vulva; yet it almost seems as though cancer is less common with prolapse than without it. One explanation that may be put forward to account for its rarity is that ulceration due to protrusion of the cervix seldom lasts long enough to cause cancer of itself. In general a long period elapses between the beginning of ulceration and the development of clinical carcinoma, and presumably, not all patients with chronic ulceration are in such physical condition that they are liable to develop cancer; the number of susceptible persons who suffer for a long period from gross prolapse is probably very small. The same argument—that the latent period is usually long—may be used to explain why pessaries in the vagina so rarely give rise to carcinoma, although they usually set up a mild chronic inflammation and occasionally cause pressure ulcers of the walls. Dr. Bride's case of vaginal cancer quoted above is uncommon enough to prove the rule.

[1] THE LANCET, 1925, i., 910.

THE RED CROSS AND DISASTER RELIEF.

A PICTORIAL supplement to *World's Health* for November shows how intimately the Red Cross movement has become associated with the relief of distress in the face of national calamities. It was from the first the desire of the founders of the League of Red Cross Societies to furnish a medium for coördinating relief work, whether national or international. To improvise relief on the spot is a long, painful and inefficient method, and the League is becoming a clearing-house of information with a view to avoiding duplications and waste of effort. Special reports were presented to the Second Oriental Red Cross Conference which has just concluded its sittings in Tokio. A brilliant example of organised relief was given in America three months ago. It will be remembered that on Sept. 18th a hurricane swept over the Atlantic coast of Florida in a tract 60 miles wide, destroying and damaging numerous buildings and disorganising the electricity, water, and gas services of Miami, a large and popular winter resort. The number of persons killed was 106; 857 were injured, and thousands were rendered homeless. The immediate demand for relief work of all kinds was naturally overwhelming, and help was soon forthcoming from all parts of the Union. From a wealth of determined efforts at rescue that of Chicago stands out as an example of almost perfect team-work and leadership. The initiative, as apparently in most great public enterprises in the States, was taken by the Press, and the *Chicago Herald-Examiner* (the headquarters of the Hearst combine) decided to despatch a relief train to Miami. The civic authorities placed the whole public health service at Mr. Hearst's disposal. The Commissioner of Health, Dr. H. N. Bundesen, to whom we owe a graphic account of the expedition,[1] was made director of the relief unit. The Illinois Central Railroad Company and the Pullman Company provided a special train with five sleepers, a dining car, two luggage vans and full personnel, free of charge. The county government board and the local hospitals allotted 33 physicians and 47 nurses. The train also

[1] Chicago's Health, Oct. 5th, 1926.

carried an X ray apparatus and two operators, an engineer with four complete chlorinator units, ten days' provisions, medical and surgical stores, clothing, ten 100-lb. cylinders of chlorine, and a ton of chloride of lime. The director had a headquarters staff of 12; two assistant directors, a railroad man, a liaison officer, a secretary, two motor-cycle police as messengers, and the sanitary and X ray personnel. Organisation and discipline was on the strictest military lines, and the unit was therefore mobile, highly efficient, and completely self-supporting. The director maintained full telegraphic communication with the civic authorities of the disaster area, and reported on arrival to the chief medical officer of the Citizens' Relief Organisation at his emergency headquarters. Before daybreak the expedition was transported in squads of 7–12 to the stations where their work could be of most value. Some squads worked in 12-hour shifts at emergency hospitals, others made house-to-house calls in outlying villages, relieved the staffs of regular hospitals or fed, clothed, and housed the destitute. In ten days the 100 members of the unit between them did 3945 dressings, performed 4426 operations, and gave 14,651 prophylactic injections.

The work of the sanitary staff was no less strenuous and important. The wells which supply Miami had all been polluted by flood-water. Chlorinators were promptly installed at two of the plants and at the principal station at Hialeah, which was waiting for its power to be restored. Next day the chief sanitary engineer was horrified to learn that Hialeah had come to life and had pumped half a million gallons of raw canal-water into the main to test it. He promptly arranged for chlorination at two points between Hialeah and the city distribution valve, but through some error of the local staff none of the chlorinators were operated and all this contaminated water entered the distribution system, just as the newspapers had sounded the "all clear." It soon appeared also that the operators of the pumping stations were neglecting to use their chlorinators. The director of the unit had to request the Miami Commissioners of Health to appoint shifts of supervising engineers at all stations, with authority to see that no unsterilised water was pumped through. Three days later the water was at last safe to drink. The inhabitants had, however, subsisted on flood-water for five days, and this fact may explain the very large number of antityphoid inoculations given by the medical staff.

The work of the Chicago train was so much appreciated, that when the Miami Commissioner of Health informed the director that the city could carry on by itself, the Mayor and other members of the local relief committee sent lengthy and urgent telegrams to Chicago for a two days' extension of its stay, which was granted. The American Red Cross described the unit officially as the best in every way that any disaster had yet produced, and, indeed, by every local account, it saved the situation.

THE DECLINE OF SYPHILIS IN EUROPE.

AT the first international congress for sexuology held in Berlin a week or two ago, Prof. Josef Jadassohn,[1] the well-known syphilologist of Breslau, reported the result of a questionnaire addressed by him to 51 specialists in 19 countries as to their views on the decline of syphilis and its relation to treatment by salvarsan. Almost all the syphilologists agreed with the explanation proposed at the German Dermatological Society in 1923 when the paramount importance of salvarsan in combating syphilis was emphasised as well as its relative harmlessness, provided proper care was taken in its manufacture and administration. In 14 countries there was unanimity as to the decline of the disease; in Italy six out of seven replies indicated a decline; in Russia statistics supplied by the Government showed a diminution of syphilis, but three practitioners returned a doubtful or negative answer, and one an affirmative; in Hungary and Bulgaria the decline of the disease was doubtful; in France there had been an undoubted decline to the extent of 50 per cent. from 1919 to 1923, but of recent years Jeanselme had observed a recrudescence in Paris and other centres which he attributed to the enormous immigration of foreign workmen and the substitution of bismuth for salvarsan. The decline of syphilis showed a considerable variation in the following countries—viz., in Denmark, Bulgaria, and Sweden by four-fifths, in England and Switzerland by a half, in Holland by three-quarters, and in Italy by a third. In 16 countries gonorrhœa had not diminished or had even actually increased, or lastly shown a decline, but by no means to such an extent as syphilis. Almost all the specialists were unanimous as to the cause of the decline of syphilis, which was to be found pre-eminently in the use of salvarsan. This explanation accounted for the difference between the decline of syphilis and that of gonorrhœa, in which disease treatment had not made any essential progress. More or less importance was attributed to accessory factors such as popular enlightenment, improvement in medical training, and the creation of treatment centres, especially of a gratuitous kind. The question as to whether salvarsan had exercised an influence on the frequency of tabes, general paralysis, and aortitis in a favourable or unfavourable sense was in many cases met by the reply that it was still too early to decide. Several observers declared that they had never seen a case which had been systematically treated with salvarsan from the first develop such sequelæ, and in no instance was an increase of general paralysis attributable to salvarsan. In conclusion, Prof. Jadassohn emphasised the importance of education, abstinence from alcohol, and improvement in housing conditions in the campaign against venereal disease.

[1] Forschungen und Fortschritte, Nov. 10th, 1926.

EPIDEMIC PREVENTION IN CHINA.

SINCE the establishment of the National Epidemic Prevention Bureau at Peking in 1919 only two annual reports have been issued. This year the report has been replaced by a general review of the history and progress of the Bureau, with the object of making its aims better known and its services more extensively utilised throughout China. The establishment of the Bureau was authorised in June, 1918, by an order of the then Minister of the Interior, Ch'ien Neng Hsun, in an endeavour to follow the lead of the Western nations, and to prevent the recurrence of serious epidemics, such as that of pneumonic plague which swept the country in 1910 and again in 1917. The Bureau, which is directly under the Ministry of the Interior, is situated in the grounds of the Temple of Heaven. Its sphere of action has gradually increased until, in June, 1926, its four-fold functions were set out as follows: (*a*) research and teaching in connexion with the causes, prevention, and treatment of communicable diseases; (*b*) the examination and standardisation of materials pertaining to the prevention, disinfection, and treatment of these diseases; (*c*) the manufacture of vaccines, sera, and other therapeutic bacterial products; (*d*) the application of preventive measures against communicable diseases, and public health teaching and propaganda among the people. Distinguished Chinese and foreign specialists in preventive medicine and bacteriology are to be invited to act as advisers to the Bureau as occasion arises. The Bureau has already done useful work in cutting short epidemics of plague, cholera, typhoid, typhus, and small-pox in various parts of the country. During the war between the Kuominchun and the Fengtien factions in 1925–26, over 3000 wounded soldiers were segregated at the emergency hospitals at Nanyuan. Several medical officers from the Bureau went down to Nanyuan and gave tetanus antitoxin injections to 1352 wounded soldiers, most of the patients receiving 1500 units each. Of those immunised, not one

developed tetanus, while 30 out of 2000 men who were not injected died from the disease. This was the first time in China that extensive immunisation against tetanus has been given to the wounded. The administration of local public health measures has hitherto been almost entirely neglected in China. In May, 1925, the Bureau obtained permission from the Peking Metropolitan Police Department to establish a public health demonstration station in Peking. The type of work undertaken at this station includes a division of general sanitation; a division of public health medical services—e.g., infant welfare and industrial hygiene; a division of communicable diseases; and a division of vital statistics. Preventive inoculation against small-pox has been steadily growing, 4812 persons having been vaccinated by the Bureau last winter as against 27 in the year 1923. The importance of trustworthy vital statistics as a basis for national public health work is beginning to be recognised in China, although in the absence of a strong centralised Government the work is beset with difficulties.

AUTUMN SESSION OF THE DENTAL BOARD.

IN his address from the chair at the opening of the eleventh session of the Dental Board of the United Kingdom (the name has this week become an anachronism), Sir Francis Dyke Acland spoke of the important event in the dental world which had marked the period since he last addressed the Board—namely, the universal adoption of dental treatment as an "additional benefit" under the National Health Insurance Act, accompanied by a new scale and conditions of service. This, he said, would undoubtedly mark a very great advance towards the improvement of the health of our nation if the scheme was properly utilised. But in spite of the careful and admirable work of the Dental Benefit Joint Committee it would take time for the new system to settle down into good working order. The dental profession, he doubted not, would endeavour to work under the scheme with loyalty to it, and would even welcome the assistance of the regional dental officers in deciding questions which must need arise. But on occasions of this sort he could not help wishing that there were a higher standard of general education among a greater proportion of our people so that they might be more ready to utilise fully and properly the skilled services which are now at their disposal. Even if all the schemes of our education, health, and insurance authorities were to work as well in practice as they were meant to work on paper, their best efforts were liable to be undermined during the ages 14 to 16, between the times when the good habits of school days were apt to cease, and when employment within the sphere of Health Insurance began. "I believe," he said, "that the Board might usefully devote a considerable amount of its propaganda work to impressing upon juveniles at this very important period of their lives the importance of care for their teeth, and to explaining to insured persons, even more than we have hitherto done, the new duties and opportunities which the extension of dental benefit presents to them." In pursuance of this object the Dental Board decided to allot £4000 out of its available surplus of £31,100 to dental health education, along with any unspent balance from the previous year. The remainder was allotted thus: grants to students £21,000, grants for research £5000, post-registration lectures £600, and post-graduate lectures £500.

THE LATE DR. E. M. DE JONG.—On Nov. 15th Dr. Edward Meyer de Jong, died at Manchester in his sixty-sixth year. A son of Mr. Edward de Jong, the flautist, he was educated at London University and Owen's College, Manchester, qualifying in 1886. After a house appointment at Ancoats Hospital he took up general practice, and for some years had been medical officer of health for Lymm. He took the D.P.H. at Manchester in 1915. One of his sons, Dr. O. M. de Jong, was a pathologist in Manchester, and died a few years ago.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXCIX.

TREATMENT OF STRANGULATED HERNIA.

STRANGULATED hernia is a variety of intestinal obstruction, which, compared with other forms, has many favourable features. Cases are seen early, and accurate diagnosis is usually possible. The site of obstruction is known, and the part of the intestine involved can often be inferred; also, from the physical character of the swelling, it is possible to form an estimate of the condition of the strangulated loop.

Inguinal, femoral, and umbilical hernia provide the great bulk of strangulations, in that order of frequency. Proportionately, however, strangulation is commoner in femoral hernia. Strangulation, which implies an interference with blood-supply, is only liable to occur where the loop of intestine passes through an aperture with rigid walls. Such an aperture is present from the commencement in femoral hernia and in most umbilical herniæ. In inguinal hernia it is of secondary formation, the result of repeated attacks of inflammation, usually at the neck of the sac. Thus inguinal strangulation arises in an old-standing hernia, and can hardly escape observation. The same process may not be discovered if it occurs in a small umbilical or femoral hernia of recent development and completely hidden by subcutaneous fat. Where symptoms of intestinal obstruction are encountered, it is therefore important to search these regions with great care. Tenderness on deep pressure above the umbilicus or in Scarpa's triangle may give the clue, even where no lump is revealed by careful palpation.

Preliminary Treatment.

Once the diagnosis of strangulation has been made, immediate operation is called for. Only when a patient is first seen when already in a condition of extreme collapse is delay justified. This condition is due to the absorption of toxic bodies, not as yet identified, from the obstructed intestine. It is strictly comparable to that of chemical shock, such as has been produced experimentally in animals by the injection of histamine or by gross damage to the tissues. The essential feature of chemical shock is that the circulatory system is starved of fluid owing to a widespread dilatation of the capillary bed; another effect of the sluggish flow in dilated capillaries is a rapid loss of heat from the limbs and body-surface.

Warmth is required to combat stasis in the peripheral circulation; if an electric cradle is not available, a liberal supply of hot-water bottles, or of blankets heated at a fire and wrapped round the trunk and limbs will serve. An effective cradle may be extemporised by placing a stove under the bed, and draping blankets on each side so that the hot air is conducted to the patient. The foot of the bed should be raised 12 inches on blocks. Fluid must be administered by rectum, by subcutaneous infusion, or directly into a vein. Since in intestinal obstruction there is probably an alkalosis in the portal circulation, 3 drachms of ammonium chloride should be added to the saline solution given by the rectum. Where shock is really severe saline solutions are useless, and a pint of 6 per cent. gum solution should be given intravenously. Solutions of gum made from commercial preparations often contain highly toxic bodies, and only those which have been physiologically tested can be given without risk.*

The Anæsthetic.

Gas and oxygen is undoubtedly the safest method of general anæsthesia for administration to collapsed patients, and in such cases is very effective. Where

* Sterile solution of gum acacia ready for use can be obtained from Evans, Lescher and Webb, 50, Bartholomew-close, E.C.1.

shock is already present spinal anæsthesia is inadmissible, owing to the rapid fall in blood pressure which may occur in the first 20 minutes after administration. However, local infiltration of the operation area with 0·75 per cent. novocaine combined with a nerve block of the ilio-inguinal and ilio-hypogastric nerves at the anterior superior spine is very effective for operations upon strangulated inguinal and femoral herniæ. Local infiltration alone works well in umbilical hernia, and is easy to carry out.

Operation.

No special incisions are required. The hernia is cut down upon, speed and hæmostasis being especially important. As the sac is distended with fluid, usually blood-stained, its identification is easy. The surrounding œdema often causes the separate coverings to stand out distinctly. The sac is opened immediately, the contents identified, and the condition of the strangulated loop inspected. The neck of the sac is then examined, and the healthy gut above and below the constriction is pulled down into the wound. Rarely it is necessary to incise the neck of the sac from within by a hernia bistoury, in order to release the constricting band. Such a procedure is difficult, and there is the double risk of wounding the gut and cutting an artery near the neck of the sac.

In an inguinal hernia division of the various layers nearly always releases the constriction; if not, the sac should be laid open in its length till the imprisoned loop is released. In an umbilical hernia the constricting ring can be cut freely outside the peritoneum. It is in femoral herniæ that difficulty is most commonly met with. The constricting element is not usually Gimbernat's ligament, as H. S. Souttar has pointed out, but a fibrous ring in the sac wall itself. Should it be impossible to pull the gut down with gentle traction, it is best to open the inguinal canal and divide Poupart's ligament, so that the neck of the sac can be freely laid open. Where there is a tight constriction and a probability that a portion of gut may have undergone pressure necrosis, this should be done at once. The attempt to pull such a loop either up into the abdomen or down into the sac in either case carries with it the risk of soiling the peritoneum with fæcal contents. The safe thing is to lay the doubtful gut bare and proceed according to what is found.

The loop of the gut when inspected is either obviously viable, obviously dead, or doubtful. When it is obviously viable, it is returned to the abdomen; when it is obviously dead, the gangrenous loop must be removed; the gut above and below may be joined end to end, or a tube may be tied into each portion, to drain away the intestinal contents, the continuity of the alimentary canal being restored by a second operation, usually 48 hours later. If the general condition of the patient is poor, and the condition of the bowel above the obstruction bad, drainage is to be preferred. If not, an entero-anastomosis should be carried out. The latter allows satisfactory repair of the hernia. Drainage implies healing by granulation, and the need for some form of permanent truss after recovery.

Where the gut is doubtful it is wrapped in a large abdominal swab wrung out in saline solution at 120° F. and left for five minutes, when it is nearly always possible to decide on the recuperative power of the wall.

Its consistency is of more importance than its colour or its lustre. If after the application of warmth and moisture it remains soft and flabby like wet blotting-paper, it will not survive. If death seems probable, resection should be carried out. A linear band of discoloration remaining where the constriction ring actually compressed the intestine and not involving its whole circumference, may, however, be infolded with a continuous stitch, and resection avoided. A patch graft of omentum may be sutured over the infolded line to insure against leakage in the event of necrosis.

If recovery seems likely, the loop may be returned to the abdomen, the hernial orifice repaired, and through a separate stab wound a small rubber tube led down to the doubtful loop. Such a portion of intestine will remain close to the hernial orifice, for it will not undergo peristalsis and the damaged surface will adhere to the neighbouring peritoneum. Should part of the wall give way in the ensuing week, the drainage-tube ensures that the general peritoneal cavity will not be infected, but that the contents will be led to the surface. As soon as the patient's condition justifies a further operation, the resulting fæcal fistula is closed by resection of the damaged portion.

Unless intestinal drainage has been necessary, the hernial aperture should be repaired and the wound closed with great care.

Post-operative Treatment and Prognosis.

While the operation is a local problem, the post-operative treatment is that for any form of intestinal obstruction. The form it shall take and the prognosis that can be offered depend entirely on the degree of toxæmia of the patient, and the amount of distension and of interference with the neuro-muscular mechanism of the wall of the gut. Should the obstruction be relieved by early operation after-treatment will usually give no anxiety. If toxic absorption has manifested itself, the measures outlined above should be prosecuted with vigour.

The intestinal wall requires the same treatment as any other weak or paralysed muscle. The principles are those employed in the re-education of a limb affected by poliomyelitis, modified to suit the case of a hollow muscular tube. They are, rest in a position of relaxation, the encouragement of nutrition, warmth, and avoidance of meddlesome stimulation.

Relaxation and rest are obtained by emptying as far as possible the distended proximal part of the alimentary canal and by withholding food and fluids by mouth, so that the weakened portion shall not be called upon to pass anything down, until decreasing distension and the passage of contents per rectum demonstrate that the contractile power has recovered. If much distension of the loop above the strangulation is present at the time of operation, its contents may be partially emptied either by puncture with a trocar, or, if resection is necessary, by passing a tube into the lumen. If the distension affects the upper part of the small intestine, a valvular jejunostomy is indicated. The stomach should be washed out both before and at the end of the operation in all cases showing intestinal distension. If fæcal vomiting has been present, a Ryle gastric tube may be passed down one of the nostrils into the stomach, and the gastric contents evacuated at short intervals by a Sprengel's pump.

As only sips of water may be given by mouth, fluids must be given plentifully by other means. Glucose should be added to fluids administered by the rectum or intravenously in the proportion of 6 per cent. Warmth, in the form of large fomentations of gamgee tissue applied at frequent intervals to the whole abdomen, is of real service.

Drugs.

Drugs are of very little value, and may be harmful. In strangulated hernia the practitioner is fortunate in having to deal with a healthy body, temporarily thrown out of gear.

We should help the intestinal wall in its efforts to propel contents along the lumen, but never try to make it do so. A series of gentle pushes may succeed where a vigorous kick only does harm. Aperients, one and all, act as irritants, and should never be given; they not only flog a muscle which is doing its best, but also cause an outpouring of fluid into the lumen. Irritants are already present in the form of toxic intestinal contents. Eserine applies an uncontrolled stimulus through the motor nerve to the muscle, and its use is therefore wrong in principle. A safer stimulant to peristalsis is the reflex one set up by the administration of a turpentine enema. Pituitrin acts directly on the muscle and is less harmful, but even so is better withheld, unless it is obvious that the natural powers of recovery are insufficient. Then it may be given in ½ c.cm. doses every two hours.

A valuable expedient is to run half a pint of liquid paraffin warmed to 100° F. down the stomach-tube, after washing out the stomach. This is entirely inert, and will neither stimulate an exhausted musculature to unavailing efforts, nor provide food for bacterial multiplication, but it has a marvellous power of finding its way along the canal, and re-establishing the normal passage of contents.

Taxis.

If a hernia is merely irreducible and there is neither tenderness in the swelling nor any sign of intestinal obstruction, taxis may be attempted. At a later period it is only justifiable if the condition of the patient or the absence of facilities make operation out of the question. When the swelling is dull to percussion any rough handling is dangerous.

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Special Articles.

THE RELATIVE INFLUENCE OF FOG AND LOW TEMPERATURE ON THE MORTALITY FROM RESPIRATORY DISEASE.

BY W. T. RUSSELL.

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IN a paper published in THE LANCET[1] I examined the influence of fog and temperature on the weekly mortality from respiratory disease among children and adults during the winter months, October to March, in the Metropolitan boroughs of Islington and St. Pancras over a period of 21 years, beginning at 1870. The analysis was made chiefly by graphical methods and the following conclusions arrived at.

1. That fog itself has no appreciable effect on the respiratory death-rate.

2. That if the prevalence of fog is associated with a low temperature and frost the respiratory death-rate of adults can be influenced very considerably, although no such effect is evident in the case of children.

Method of Partial Correlation.

When the foregoing was written, I had in mind the fact that the method of partial correlation would have carried the analysis a stage further and demonstrated which of the two variables, a fall in temperature or the presence of fog, exercised the greater influence on the respiratory mortality. I refrained from the application of this method at the time, however, as one of the variables, the amount of fog, could not be regarded, in a statistical sense, as forming a normal distribution. Since then Dr. Major Greenwood has suggested that, in the absence of a more suitable mathematical formula, the method of partial correlation would give an answer having at least some value as a first approximation and, in investigating the subject in this way, I am indebted to him for much valuable advice. I have calculated, in addition to the means of the three variables and the standard deviations of their distributions, the essential correlation coefficients and regression equations between the number of respiratory deaths among adults at ages 55 and upwards in the following week and (1) the mean temperature of the previous week, (2) the amount of fog in the previous week. A lag of one week in the deaths was allowed for in view of the fact that Dr. Greenwood, in an unpublished research to which he kindly gave me access, had found that the temperature was more highly correlated with the death-rate in the succeeding week than with that in the same week. Although the correlation coefficients were calculated for the corresponding week over the series of 21 years for each of the 26 weeks, comprising the period October to March, the tabular presentation and discussion are limited to the interval between the eleventh and nineteenth week, as the greatest prevalence of fog occurred, on the average, during this period. As regards the amount of fog, the assessment was made on a purely arbitrary basis. Where it was stated in the weather records that fog prevailed at 9 A.M. and at 9 P.M., and the explanatory note indicated that fog was present throughout the day, the amount of fog for that particular day was represented by 100. Fog in the morning and lasting until noon was standardised as 50, and so with intermediate amounts, due regard being given to duration and intensity. A series of comparative figures of the daily amount of fog were thus obtained. The totals for the days in each week were summed and the results taken as representing a quantitative statement of the weekly incidence of fog. Objection may possibly be raised to this system of measuring fog in order to ascertain if any association exists between its prevalence and an increase in the respiratory death-rate, as the effect of two successive foggy days might exercise a more deleterious effect on the respiratory organs than would the presence of fog on four successive half days, and yet the total amount of fog for the two weeks would be quantitatively the same. In the present case the data were not sufficient to consider periods shorter than a week. But a like criticism can be directed against the use of the mean temperature as officially published, the influence of two very cold days in any one week of otherwise high temperature can be overshadowed in the statement of the mean temperature for the week.

[1] THE LANCET, 1924, ii., 335.

The Results Examined.

The results now fall to be examined. During the period the eleventh to the nineteenth week of the 21 years there was no great variation in the average weekly temperature, as will be observed from Table I. The lowest mean temperature, 37·8° F., occurred in the fifteenth week, and the highest, 40°, in the nineteenth week. The standard deviations showed that the temperature distribution was much the same for each of the nine weeks as the values ranged from a minimum of 4·57° to a maximum of 6·27°. With the exception of a few weeks the mortality, like the temperature, was fairly constant. The greatest number of deaths occurred, on the average, in the nineteenth week, when there were 41 deaths. The next highest totals were 38 and 37 in the fourteenth and fifteenth weeks respectively. Apart from the nineteenth week, when the standard deviation reached 28·63 as compared with 16, the average for all the weeks, there was little dissimilarity in the distribution of the deaths. As regards the amount of fog, with the exception of the eleventh week over the series of years when the mean was 163, the other weeks seemed to be characterised by a general constancy in the average which centred round 80. But this similarity in the magnitude of the means must not be accepted as implying a like similarity in the distributions. There was a wide variation in the amount occurring in the particular weeks of certain years as the standard deviations of the distributions ranged from 66 to 135.

Having seen the manner in which the magnitude of the three factors varied, it was next of interest to study their interdependence as measured by the size of their correlation coefficients of the zero and first orders given in Table II. As was to be expected, the correlation coefficients between temperature and the number of respiratory deaths were negative in sign, and, in the present case, were all statistically significant, as they exceeded twice their standard errors. The highest coefficient of the zero order occurred in the thirteenth week of the 21 years, when the value was $-0{\cdot}806 \pm 0{\cdot}076$, and the two smallest $-0{\cdot}381 \pm 0{\cdot}187$ and $-0{\cdot}459 \pm 0{\cdot}172$ were found in the twelfth and nineteenth weeks respectively. The mean value of the coefficient for the series of nine weeks was in the neighbourhood of $-0{\cdot}54 \pm 0{\cdot}14$. The amount of fog and the number of deaths were positively correlated and in the eleventh week the value was $+0{\cdot}553 \pm 0{\cdot}151$, in the twelfth week $+0{\cdot}542 \pm 0{\cdot}151$, in the fourteenth week $+0{\cdot}777 \pm 0{\cdot}086$, in the eighteenth week $+0{\cdot}855 \pm 0{\cdot}059$, and in the nineteenth week $+0{\cdot}569 \pm 0{\cdot}086$. The correlation coefficient of $+0{\cdot}855 \pm 0{\cdot}059$ between the amount of fog in the eighteenth week and the respiratory deaths in the nineteenth week was remarkably high, and some of its importance was due to the size of one pair of coördinates—namely, the temperature and the amount of fog in the fourth week of 1880, which was the eighteenth week of the series as reckoned from the beginning of October of the previous year, and the respiratory deaths in the nineteenth week—i.e., the week ending Feb. 7th, 1880. In this instance the mean temperature was 28·9°, the amount of

TABLE I.

Showing the Means and Standard Deviations of (1) the Weekly Number of Respiratory Deaths among Adults Aged 55 Years and Upwards, (2) the Weekly Temperature, (3) the Amount of Fog, in Certain Weeks Measured from the Beginning of October over a Series of 21 Years from 1870.

No. of week.	No. of respiratory deaths.		Temperature.		Fog.	
	Mean.	Standard deviation.	Mean.	Standard deviation.	Mean.	Standard deviation.
11th.. ..	29 ± 3·3*	15·20 ± 2·35*	38·1 ± 1·0*	4·78 ± 0·74*	163 ± 29·4*	134·7 ± 20·8*
12th.. ..	30 ± 2·9	13·19 ± 2·03	38·1 ± 1·1	5·23 ± 0·81	70 ± 14·4	66·3 ± 10·2
13th.. ..	32 ± 2·9	13·39 ± 2·07	38·1 ± 1·4	6·27 ± 0·97	77 ± 22·4	102·8 ± 15·9
14th.. ..	38 ± 4·1	18·62 ± 2·87	38·9 ± 1·2	5·64 ± 0·87	80 ± 23·4	107·4 ± 16·6
15th.. ..	37 ± 4·0	18·54 ± 2·86	37·8 ± 1·3	6·01 ± 0·95	82 ± 24·3	111·2 ± 17·2
16th.. ..	34 ± 3·5	15·93 ± 2·46	38·4 ± 1·2	5·68 ± 0·88	80 ± 18·7	85·7 ± 13·2
17th.. ..	32 ± 2·6	11·88 ± 1·83	37·8 ± 1·0	4·57 ± 0·71	87 ± 24·5	112·4 ± 17·3
18th.. ..	34 ± 3·2	14·63 ± 2·26	39·8 ± 1·0	4·78 ± 0·74	70 ± 17·3	79·2 ± 12·2
19th.. ..	41 ± 6·2	28·63 ± 4·42	40·0 ± 1·1	4·93 ± 0·76	85 ± 21·7	99·4 ± 15·3
20th.. ..	30 ± 2·5	11·27 ± 1·74	—	—	—	—

* Standard errors.

TABLE II.

Showing the Correlation Coefficients of the Zero and First Orders between the Weekly Numbers of Respiratory Deaths and the Temperature and Amount of Fog of the Previous Week over a Series of 21 Years Beginning at 1870.

No. of week.	r_{12}	r_{13}	r_{23}	$r_{12\cdot3}$	$r_{13\cdot2}$
11th.. ..	− 0·687 ± 0·115	+ 0·553 ± 0·151	− 0·507 ± 0·162	− 0·566 ± 0·148	+ 0·327 ± 0·195
12th.. ..	− 0·381 ± 0·187	+ 0·542 ± 0·154	− 0·064 ± 0·217	− 0·413 ± 0·181	+ 0·561 ± 0·150
13th.. ..	− 0·806 ± 0·076	+ 0·211 ± 0·208	− 0·380 ± 0·187	− 0·803 ± 0·078	− 0·174 ± 0·212
14th.. ..	− 0·665 ± 0·122	+ 0·777 ± 0·086	− 0·643 ± 0·128	− 0·343 ± 0·193	+ 0·611 ± 0·137
15th.. ..	− 0·533 ± 0·156	+ 0·205 ± 0·209	− 0·128 ± 0·215	− 0·522 ± 0·159	+ 0·163 ± 0·212
16th.. ..	− 0·638 ± 0·129	+ 0·135 ± 0·214	− 0·089 ± 0·216	− 0·634 ± 0·130	+ 0·102 ± 0·216
17th.. ..	− 0·617 ± 0·135	+ 0·161 ± 0·213	− 0·022 ± 0·218	− 0·622 ± 0·134	+ 0·187 ± 0·211
18th.. ..	− 0·660 ± 0·123	+ 0·855 ± 0·059	− 0·500 ± 0·164	− 0·518 ± 0·160	+ 0·807 ± 0·076
19th.. ..	− 0·459 ± 0·172	+ 0·569 ± 0·148	− 0·460 ± 0·172	− 0·270 ± 0·202	+ 0·454 ± 0·173

1 = Number of deaths. 2 = Temperature. 3 = Amount of fog.

fog 345, and the number of respiratory deaths 156. This excessive mortality was real and was not due to any error of deferred registration of deaths as the weekly returns of the Registrar-General's Department for the week ending Feb. 7th, 1880, contained the following statements regarding the mortality for London generally.

"The annual death-rate from all causes which had been equal to 24·6, 27·1, and 31·3 in the three preceding weeks, further rose last week to 48·1 per 1000. The death-rate last week, under the influence of cold and fog, was higher than it has been in any week since the cholera epidemics of 1849, 1854, and 1866. The largest proportional excess of deaths last week occurred among persons aged upwards of 60 years. The deaths referred to diseases of the respiratory organs which had been 559 and 757 in the two preceding weeks, further rose to 1557 last week and exceeded the corrected weekly average by no less than 1118."

The importance of the high correlation in the week mentioned will be referred to later. The average coefficient between the number of deaths and the amount of fog for the nine weeks was $r = + 0{\cdot}434 \pm 0{\cdot}177$. When the partial correlation coefficients were calculated so as to exclude the influence of the one factor when the other was correlated with the number of deaths, the values were reduced in magnitude, but seven of the nine coefficients between the temperature and the deaths with the amount of fog constant remained sensible, and four in the case of the fog and the number of deaths with the temperature constant. It will be observed that in the thirteenth week, the sign of the partial coefficient between the amount of fog and the number of deaths became negative. An examination of the original weather records for this week over the series of 21 years revealed a curious anomaly, that in one instance the week ending Dec. 27th, 1879, the presence of fog and a low temperature produced no effect on the death-rate, as is indicated by the following statement of the daily records of temperature and fog in this week and the mortality of the succeeding weeks.

Record of Temperature, Fog, and Mortality for Week ending Dec. 27th, 1879.

Days in week ending Dec. 27th, 1879.	Mean temp.	Remarks.	Weeks ending—	No. of respiratory deaths.
21st	31·0	Sharp frost in morning. More or less fog all day.	Dec. 20th	41
22nd	29·2	Fog in the evening, very dense from 9 P.M.	,, 27th	46
23rd	34·9	Slight fog all day, thick fog at night.	Jan. 3rd	32
24th	31·9	—	,, 10th	21
25th	31·5	Dense fog clearing after 8 P.M.	—	—
26th	32·6	—	—	—
27th	30·0	—	—	—

In five of the series of nine weeks the partial correlation coefficients between the temperature and the number of deaths with the amount of fog constant were in excess of those between the amount of fog and the mortality with the temperature constant, and in the remaining instances the higher value was between the mortality and fogginess. When the average partial coefficient was calculated for the nine weeks over the series of the 21 years the value was $- 0{\cdot}533 \pm 0{\cdot}156$ when the amount of fog was constant and $+ 0{\cdot}324 \pm 0{\cdot}195$ when the effects of temperature were eliminated. The latter value does not exceed twice the size of its standard error and, therefore, cannot be considered as statistically significant. These results thus show that, although fog had a decided influence in some weeks, yet, on the average, a low temperature exercised the more dominant influence.

Accuracy of Prediction.

Having seen the degree of relationship that existed between the weather factors and the number of respiratory deaths, it now remained to be seen to what degree of accuracy the number of deaths in

any one week could be predicted if the temperature and the amount of fog in the previous week were known and what error was involved if the forecast was made from temperature alone. To find a solution to these problems, two regression equations were calculated for each week: (1) the one, a multiple regression, between the deaths on the one hand and the temperature and the amount of fog on the other; (2) the other, a simple regression, between the deaths and the temperature alone. By means of these equations, the numbers of weekly deaths were predicted from the amounts of fog and temperature and the percentage mean error between the theoretical and observed values were calculated. The results are given in Table III., where it will be seen that, in six

TABLE III.

Showing (a) the Multiple and (b) the Simple Regression Equations Connecting the Respiratory Deaths with the Temperature and the Amount of Fog, and the Percentage Mean Error that Results in Predicting the Respiratory Deaths from these Factors.

No. of week.	Equations.	Percentage mean error.
12th.. ..	(*a*) D = 83·2 − 1·511 T + 0·027 F	26·31
	(*b*) D = 102·3 − 1·898 T	26·15
13th.. ..	(*a*) D = 58·7 − 0·890 T + 0·105 F	25·89
	(*b*) D = 69·2 − 0·947 T	31·84
14th.. ..	(*a*) D = 135·6 − 2·522 T − 0·020 F	20·82
	(*b*) D = 129·4 − 2·396 T	21·71
15th.. ..	(*a*) D = 64·8 − 0·927 T + 0·103 F	24·23
	(*b*) D = 122·0 − 2·186 T	31·61
16th.. ..	(*a*) D = 84·0 − 1·366 T + 0·020 F	26·93
	(*b*) D = 87·5 − 1·416 T	29·75
17th.. ..	(*a*) D = 81·8 − 1·321 T + 0·011 F	22·50
	(*b*) D = 83·3 − 1·337 T	22·99
18th.. ..	(*a*) D = 106·6 − 1·965 T + 0·019 F	26·51
	(*b*) D = 108·7 − 1·975 T	26·64
19th.. ..	(*a*) D = 97·3 − 1·860 T + 0·253 F	25·44
	(*b*) D = 198·5 − 3·957 T	34·85
20th.. ..	(*a*) D = 48·4 − 0·571 T + 0·052 F	20·83
	(*b*) D = 72·0 − 1·049 T	21·64

D = Number of respiratory deaths.
T = Mean temperature. F = Amount of fog.

out of the series of nine weeks, the forecast based on the temperature alone was practically as good as that founded on the combined effect of temperature and fog as the percentage mean errors in both instances were almost identical. As might be expected, in the weeks in which the correlation coefficients between the amount of fog and the mortality exceeded those between the temperature and the deaths, the errors derived from the multiple regression were less than those resulting from the simple regression. The greatest difference occurred in the nineteenth week of the series of years in which the errors were 25·44 and 34·85 per cent. respectively. Reference has already been made to the fact that in London generally there was an exceptionally high respiratory mortality among the adults in the corresponding week in the year 1880, which the Registrar-General connected with the "low temperature and dense fogs." In the same week of that year in Islington and St. Pancras the respiratory deaths among adults numbered 156, the theoretical number deduced from the influence of temperature alone was 84, but when the combined effect of fog and temperature were taken into consideration the number of deaths was raised to 131. The impression conveyed by Table III., that even if the measure of fog and temperature in one week is known it is impossible to predict very accurately the number of deaths from respiratory disease in the following week, is, of course, correct. Thus in the series giving the least percentage error (that for the fourteenth week), on the average there is an error of the order of one-fifth of the average value and the individual discrepancies between observations and predictions are often large. For instance, in the year 1890 there were actually 86 deaths in the fourteenth week, the calculation from fog and temperature provides only 61; in 1886 there was also heavy mortality, 74; the calculation only postulates 51. But that this method of calculation is nearer the truth than if the effects of temperature and fog of the previous week are ignored may be easily proved. If there is an unknown series of numbers written on tickets and a person is asked to guess the number written on one ticket drawn at random, what shall he guess? If he knows nothing whatever about the numbers, any guess is as good as another and is a mere guess. In public health problems further particulars are usually available. If one is asked what is the most probable number of deaths in a particular week of the year, it would seem reasonable to say the average number of deaths in that week (corrected for changes of population) over a series of years, when the deaths dealt with are due to a cause not known to be increasing or diminishing. But if that system were adopted in the case just mentioned the estimate would be 38 deaths for both 1886 and 1890; the calculation gives 61 and 51 respectively and, although not good approximations to 86 and 74, are still very much nearer the true value than 38 and 38. In fact, as a little calculation, which it seems unnecessary to reproduce in full, shows, if a knowledge of the temperature and fog in the previous week is made use of, the average accuracy of the prediction is improved to the extent of 34 per cent. of its measure of uncertainty, that under the most favourable circumstances predicting from the mean value would give an average percentage error not of 20 but of 30. For these reasons these regression equations have, I think, some little practical value. I should, however, strongly deprecate any suggestion that by their means it is possible sharply to distinguish the respective shares of fog and low temperature in the genesis of mortality.

Conclusion.

It is essential to bear in mind that, in any study of the influence of weather on the prevalence of disease, the assignment of the increased mortality to any particular factor is not nearly so simple as is generally believed. The fact, often overlooked, is that there are a multiplicity of causes, both atmospheric and meteorological, all of which are highly inter-related, and it is the cumulative effect of these, and not the influence of an individual factor that finds expression in an increased death-rate from respiratory disease. The same point is strongly emphasised by Sir George Newman in the annual report of the Ministry of Health for 1925, p. 27, in the following sentence:—

"The true inference is, I believe, that in the matter of atmospheric pollution, as in that of meteorological factors, the inter-related variables in any given case are so numerous that only by means of a far longer series of observations than our data provide can any valuable statistical conclusions be reached."

As regards the importance of the two factors examined, temperature and the amount of fog, so far as the present data are concerned, it seems warrantable to conclude:—

1. That although the number of respiratory deaths in the following week was more highly correlated with the fogginess than with the temperature of the previous week over certain periods, yet, on the average, a low temperature exercised the greater influence.

2. That knowing the temperature and the amount of fog, it is possible to predict the mortality of the succeeding week, but only within a marginal error of roughly 30 per cent.

THE LATE DR. H. D. CROOK.—Dr. Herbert David Crook, who died suddenly on Nov. 15th at the age of 70, received his medical education at Bristol and Leeds, and qualified as M.R.C.S. in 1877. He served as surgeon-major in the Turkish Army during the Russo-Turkish War of 1877–78, and became medical officer in Constantinople; soon afterwards he acted as surgeon to the Field Force in Griqualand, South Africa. In 1901 Dr. Crook settled in Kimberley, but later left for Canada where he interested himself in farming. Five years ago he went to Irchester, Northamptonshire, and took up the practice in which he was engaged at the time of his death. He leaves a widow, two daughters, and a son.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE annual meeting of Fellows and Members of the College was held on Thursday, Nov. 18th, at the College in Lincoln's Inn-fields, Sir BERKELEY MOYNIHAN, the new President, in the chair.

The report of the Council stated that during the past year a deputation had been received from the Association of Members urging that in the petition of the College for a new Supplementary Charter, which was granted in August last, there should be included a clause securing for Members representation on the Council. Such a clause, according to the report, was not included because of its controversial nature.

The PRESIDENT explained the significance of the new Supplementary Charter, which gave the Council power to alter by-laws in accordance with a long and careful method of procedure; certain by-laws, he said, had already passed the stages of revision, the intention being that they would come into force early next year. Only once, he added, had the annual addition to the number of Members been larger than it was during the year under consideration, when the figure 768 was reached.

Mr. H. WANSEY BAYLY moved a resolution that this meeting should reaffirm the justice of admitting Members to representation upon the Council, and should urge the Council to submit the matter to a postal vote of Fellows and Members. Dr. REDMOND ROCHE seconded the motion, pointing out that it was sought in this way to remedy the injustice to the general constituency of the College brought about by the Charter of 1843, which vested the government of the College in the Fellows. The resolution was carried by a large majority.

CRIPPLED AND INVALID CHILDREN.

LONDON CONFERENCE, NOV. 18TH–19TH, 1926.

A CONFERENCE on the Care of Crippled and Invalid Children, arranged by the Invalid Children's Aid Association and the Central Committee for the Care of Cripples was held in the Great Hall of the British Medical Association on Nov. 18th and 19th. The chairmen at the four sessions were Lord Islington, the Duchess of Atholl, Sir Arthur Stanley, and Sir Robert Jones, and the opening address was delivered by Lord Eustace Percy in the absence of the Minister of Health, who was engaged, as Mrs. Neville Chamberlain explained, in presiding over the Standing Committee dealing with a Bill on smoke abatement.

A Survey of Work in Progress.

Mr. R. C. ELMSLIE reminded the audience that the prevention of crippling conditions was not easy. Much more knowledge was needed of infantile paralysis —now the greatest cause of crippling—before it could be prevented. Tuberculosis was diminishing and did yield to adequate social improvement, but the exposure of the child to infection from parents and others could only be got over gradually by preventive measures and education. Provision for the treatment of rickets would be needed for many years; the congenital causes of crippling in this country were at present unpreventable.

Sir ROBERT JONES said there was great ignorance of the causes of tuberculosis and rickets. Parents did not know that every tuberculous child had become infected by the ingestion of the bacillus either from milk or by direct contact with a human consumptive, and they generally looked upon rickets as a hereditary scourge from which there was no escape. The essential duties of the C.C.C.C. were medical rather than educational, and they must aim at cutting off the supply of cripples at the source. There were very few facilities for cripples over school age; some of the dismantled Poor-law infirmaries might be equipped to deal with these patients.

Dr. R. VEITCH CLARK said that, as M.O.H. of Manchester, he received about 500 notifications each year of new cases of tuberculosis in children under 15 years of age, of which at least half were non-pulmonary. A milk-supply 10 per cent. of which was tuberculous was a scandal. The relation between catarrhal conditions and rickets was not realised, nor was the importance of fresh air and sunlight in combating it understood. Inadequate diet was a corollary of poverty and would always be with us to some extent, but the abolition of atmospheric pollution was within our power and, if carried out, would, he believed, practically eliminate rickets.

The Preventive Side.

Papers on Rickets, Rheumatism, Chorea and Heart Disease, and Tuberculosis were read respectively by Dr. Stuart J. Cowell, Dr. Arbour Stevens, and Dame Agnes Hunt.

Dr. COWELL said that rickets was commonly thought of as a disease of children's bones, producing lameness. Actually, however, it caused also disturbance in the general processes of the body, and was responsible for teeth that developed late, for flabby muscles, reduced resistance to disease, and a disposition to languor and apathy. The antirachitic vitamin (D) could be manufactured by exposure to ultra-violet light, and many foods—milk, fats, oils, and vegetables which contained little or none of the vitamin—could be rendered powerfully antirachitic by exposure to ultra-violet rays. Rickets could be prevented either by an adequate supply of vitamin D in the food or by exposing the body to ultra-violet light. A mother could hand on her supply to her developing offspring both before birth and during lactation. A widespread use of cod-liver oil by mothers would do a great deal to reduce rickets, and small doses of a quarter of a teaspoonful twice a day could safely be given to an infant of a few days' old. Cow's milk varied in vitamin capacity, the pasture-fed summer cow giving milk with a high antirachitic vitamin content, and the stall-fed winter cow practically none. It might be feasible to give the cows ultra-violet light treatment in winter. To prevent the crippling effects of rickets we must rely on early treatment, and it should be remembered that nature would work wonders if given the opportunity. The assertion that rickets was now rare in London was hardly borne out by recent statistics, and it was still rampant in industrial centres.

Dr. STEVENS pleaded for the treatment of cardiac cripples alongside orthopædic cripples. They needed the same things—early treatment, more hospital beds, specialists to treat them, prolonged stay in hospital, and intelligent after-care. There were some 80,000 to 100,000 cardiac cripples in the country, for whom little was being done. Heart disease in children was increasing, these cases now outnumbering those suffering from tuberculosis. Views varied greatly as to the cause of heart disease. Poverty was recognised as a predisposing, though not as a primary cause, but Dr. Stevens considered that the poor, who could not afford proper nourishment or good housing conditions, were the greatest victims, and that malnutrition was the chief predisposing cause. There was a definitely acid type of child, whose diet was lacking in such articles as milk, eggs, and cheese, and an enormous proportion of heart disease cases occurred among this group of children.

Dame AGNES HUNT thought it extremely difficult to prevent tuberculosis because it took so long to manifest itself. A consumptive mother might suckle her new-born infant, kiss it, and sleep with it, and it was almost impossible to take preventive measures with a baby of 4 or 5 months old. In any case, it was not fair to place the burden of prevention on a sick and overworked mother. Trouble should be taken to spread a knowledge of the laws of health, and to combat ignorance, vice, and dirt.

"Unity of Effort."

Dr. C. E. TANGYE gave an outline of the orthopædic scheme in Wiltshire, linked up with that for Bath and the county of Somerset. The scheme was run by a

purely voluntary committee, but the county council was its backbone as far as finance was concerned. Coöperation from general practitioners was an essential part of the scheme, and doctors were beginning to refer their patients from the earliest stages. The spectacular appeal would gradually disappear as prevention became more and more the aim of all orthopædic schemes. Dr. Tangye blamed old-fashioned desks and forms in schools for many postural deformities, and said that the provision of furniture which did not manufacture crooked spines should be considered an elementary duty of any local education authority.

Mr. G. R. GIRDLESTONE spoke on the part of voluntary effort in an orthopædic scheme, and made out a strong case for the voluntary hospital and for a scheme worked out on a voluntary basis. One great objection to a purely official hospital dealing with cripples was the age limit. In a hospital run by a local authority no treatment could be given to any of these patients over school age except those suffering from tuberculosis. Many victims of infantile paralysis and of accidents, and others were thus unprovided for, and no system should be accepted which excluded them. A hospital could not be run entirely on a voluntary basis without financial help from the local authority, but he preferred the partly voluntary type and a staff that was honorary or paid on a part-time basis. Members of such a staff often held special orthopædic appointments, and this encouraged coöperation between special and general hospitals. Patients came to a voluntary hospital or clinic through all sorts of channels, official and private. If the clinic was run by a voluntary committee it soon became widely known locally, and cases tended to come at an earlier stage. Where local authorities tried to run clinics with their own personnel, without the help of skilled and semi-skilled volunteers, the staff got grossly overworked.

Dr. W. G. SAVAGE explained what he considered a more excellent way. In Somerset the orthopædic scheme was administered by the county council, use being made of the voluntary hospitals. Instead of waiting till public sympathy was aroused to start a clinic, this was done by a stroke of the pen, the clinics being run by the county council in its own premises. Voluntary help was taken advantage of, but it was under the control of the local authority. By this arrangement there was better selection of cases. He did not think the age limit a disadvantage. When resources were restricted it was necessary to be a little hard-hearted, and to concentrate on the cases likely to give the best results. Unless prevention was in the forefront it was not worth carrying on a scheme at all. The curative side was in the very bones of the staff of a voluntary hospital, and they were not accustomed to doing preventive work.

Mr. GIRDLESTONE said, in reply, that time would prove which method was the best, and that method would be adopted, but different systems might apply in different areas. He would remind Dr. Savage that any orthopædic scheme existed only because up to the present prevention had not been successful. Official channels were just as ready to pass children quickly to the clinics whether the clinics were official or voluntary in origin. The real economy was to secure early diagnosis and treatment, and voluntary hospitals did take an interest in preventive work.

Dr. W. B. KNOBEL said that London had a complete scheme for children suffering from tuberculosis, and no child recommended for residential treatment was ever kept waiting. But they could not get the cases early. Children were sent to hospital schools after they had been attending for weeks, months, or even years, at out-patient departments. Nobody could really think it better for a child with a tuberculous hip or spine to be treated at an out-patient department than in a country institution. There was said to be a shortage of beds for infantile paralysis. But there were plenty of beds in the fever hospitals of the M.A.B. for cases in the first stage, and the 50 beds at Carshalton for the second stage were never full. He pleaded with orthopædic surgeons to place children in the best conditions at the earliest moment.

Sir ARTHUR STANLEY expressed some disappointment that the hopeful signs of a scrap between Mr. Girdleston and Dr. Savage had petered out so amicably. Personally he thought the best plan was an official scheme supplemented by voluntary effort.

Education of the Cripple.

At the final session of the Conference the education of the physically defective child was discussed from the point of view of the surgeon (Mr. K. J. Acton-Davis), of the school manager (Mrs. Salmond), of the matron (Miss Hughes), and of the teacher (Miss James). Sir Montagu Burrows dealt with the subject of the physically defective child after school, and there was some useful discussion on the vocational training and placing of cripples in employment.

THE MECHANISM AND INCIDENCE OF INDUSTRIAL LEAD POISONING.

IT is important to realise that the chief danger in any lead trade results from inhalation of dust or fumes; thus the painter using ready-mixed paint incurs only the very slight danger of ingesting small amounts of lead—e.g., from his paint-smeared fingers. As soon, however, as he uses sandpaper on painted surfaces by any *dry* process, he begins to inhale large amounts of lead dust and he inhales oxides of lead when he burns paint from a painted surface with a blow-pipe. Animal experiments (T. Oliver, 1914, and J. C. Aub, 1924) have demonstrated that *inhalation* of small amounts of insoluble lead compounds is much more dangerous than *ingestion* of very large amounts.

Work in Germany (Gusserow, 1861, Heubel, 1871) and in U.S.A. (Aub, 1924) has shown that inhaled and ingested lead compounds are stored as an insoluble phosphate in the skeleton. This may be gradually mobilised and excreted in the ordinary course of metabolism, or by the ingestion of acids; in passing through the blood-stream it produces toxic symptoms. Detailed analyses of human tissues have shown that workers in dusty lead trades may have from 0·5 to 1 g. of lead phosphate in the skeleton.

Susceptibility of Women.

In a discussion whether women are more susceptible to lead poisoning than men, Alice Hamilton (Harvard), in her book "Industrial Poisons in the United States," quotes the following facts:—

The White Lead Works, Newcastle-on-Tyne, in 1897 employed 328 men and 571 women. During six months of that year 19 men were reported as having lead poisoning, a rate of onef or every 17 employed; and 66 women or one for every eight to nine employed—i.e., the rate was just double (Oliver).

The report of the Factory Inspection Department for 1910 showed that in the Staffordshire potteries there was twice as high a rate of plumbism among women dippers as among men dippers.

Newman, McConnell, Spencer, and Phillips, of the United States Health Service in 1921 examined 1436 men and 373 women (Occurrence of Lead Poisoning in the Pottery Trades of New Jersey, Pennsylvania and Ohio). Although the men were far more exposed to lead in this trade than women, there was more plumbism among the women than among the men. The average length of exposure of the "positive" male cases was 17 years, and the female cases 9·3 years.

It appears that the female reaches certain stages of lead poisoning in about half the time required for the male to reach them. In one series, comparing the men and women who work side by side in the dipping rooms, it was found that 58 male ware-carriers had no positive cases of plumbism, whilst 62 women doing the same work had a rate of 4·8 per cent. Among 71 male dippers' helpers the rate of plumbism was 8·4 per cent., and among 149 female dippers' helpers the rate was 14·4 per cent. In one series of

Hamilton's, however, and in another observation of Prendergast's and in another of E. Collis's, there was no numerical difference between the incidence in men and that in women.

E. L. Collis and M. Greenwood (" The Health of the Industrial Worker," 1921) sum up the subject as follows :—

> The statement is not infrequently made in relation to lead poisoning that females exhibit a sexual proclivity to plumbism. We hold that the effects of plumbism in causing miscarriage and still-birth is a sufficient reason for excluding females from exposure to lead dust, but we do not feel satisfied that there is evidence that they fall victims more readily than men. When women (who by long employment had become more or less acclimatised, more or less immune to the influence of lead) were quite wisely prohibited from work in white lead beds in 1897, and their place was taken by non-acclimatised men, a great rise in cases of plumbism occurred affecting the men. Later, as the causation—the inhalation of lead dust—became more fully recognised and guarded against, the case-incidence fell almost to vanishing point. When, 20 years later, during the war, owing to the scarcity of male labour, the employment of women at this work was again permitted temporarily and non-acclimatised women took the place of acclimatised men, no rise in the case-incidence occurred. It was confidently expected that a rise would occur because the new workers were non-acclimatised, and not because they were women ; and the absence of any significant rise was at once attributed to the efficacy of the precautionary measures now adopted and to the resistant powers of woman. On the completion of the war the men resumed their old work ; during the period of war service they had lost their acquired immunity ; more cases of poisoning were now reported among the men than occurred when the women took over the work. The existence of greater activity in the industry in the post-war period must be remembered when considering this evidence; but after due allowance has been made it supports the view that women are not more susceptible to lead poisoning than men. We are unaware of any scientific evidence in support of the alleged sexual proclivity and regret that a case, sound in itself, should be supported by unsound arguments.

Thus, in weighing the figures quoted it is necessary to take the economic factor into consideration, for, apparently, when men and women were under equally unfavourable economic conditions the incidence was the same. It may be argued that the older figures show a greater incidence amongst women, because of the inferior economic conditions under which they had to exist. The average exposure of the women, however, is much less (see figures of United States Public Health Service by Newman and others quoted above).

Damaging Effects in Women.

Lead seems to do more harm to women than to men. They succumb in shorter period (Hamilton, quoted above). They also get more severe forms of poisoning, especially convulsons and blindness. Prendergast, 1910, in the Potteries, found the following :—

640 Cases.

	Men. %	Women. %
Colic	77·6	69.1
Paralysis	57·0	30·0
Lead convulsions	15·0	34·9
Total blindness	2·3	7·7
Partial blindness	3·5	10·2

Hamilton discovered the greater liability of women to lead encephalopathy in the United States pottery industry. In 1911 there were 1100 men employed in lead processes in the potteries and 87 cases of lead poisoning had occurred among them during that year—a rate of about 8 per cent. During the same year there were 57 cases among the 393 women employed—a rate of 14 per cent. The proportion of encephalopathy in the male cases was only 1 in 17 ; in the female cases it was 1 in 4·5. These figures, of course, refer to white lead dust, but all authorities are agreed that the painting trade is a frequent source of the worst forms of lead poisoning.

Oliver states that the maximum age-incidence occurs at an earlier age in women (18–23) than in men. Further, this is the age when they would be employed in painting. Oliver further says that while females rapidly break down in health under the influence of lead, men can work a longer time in the factory without suffering, their resistance apparently being greater.

Reproduction.

The work of the Harvard group (Aub and collaborators, 1922–1926) shows that lead absorbed is stored in the bones and may at any future time become free in the circulation. Women exposed to lead before marriage, therefore, run the risk, when married, that, even though they are now removed from exposure, they may have miscarriages and dead babies because lead can be liberated from the bones and destroy the ovum or fœtus. Reid gives the following figures :—

100 Mothers.

Occupation.	Miscarriages and stillbirths.	Deaths under one year per 1000 born.
Housework	43·2	150
Mill work, not lead	47·6	214
Lead work before marriage	86·0	157
Lead work after marriage	135·5	271

This table shows that mill work after marriage, even without exposure to lead, results in a high rate of infant mortality ; but lead work before marriage increases the abortion-rate. Lead work after marriage shows both these effects to an exaggerated degree.

Dineufbourg wrote a thesis in 1905 on the effects of parental plumbism. He divided the cases into three groups : (1) Women married to lead workers, but themselves free from lead ; (2) women who had been exposed, but married men free from lead ; (3) women who had been exposed who married exposed men.

—	Pregnancies.	Abortion.	Stillborn.	Per cent.	Born living.	Percentage of living surviving first year.
Fathers leaded	442	66	47	25·5	329	74·4
Mothers leaded	134	17	6	17·0	111	73·9
Both parents leaded	23	4	4	35·0	15	66·6

It is, of course, in the third group that the effect of the lead is most striking. If the two other groups are compared, paternal plumbism seems to be as disastrous as maternal plumbism, and, indeed, the abortion-rate is actually higher ; but the second and third groups are too small to be taken very seriously. A. Pinard quotes a case of a woman, married to a lead-poisoned man, who was pregnant five times and always prematurely delivered of a dead child and who then bore to a healthy man a perfectly normal child.

Cole, of Wisconsin, and Weller, of Michigan, fed commercial white lead in capsules to guinea-pigs with the following results :—

—	Free female mated with :	
	Free male.	Lead male.
Number of offspring	58·0	65·0
Average birth-weight, grams.	81·5	66·3
Number still-born	3·0	3·0
Died first week	2·0	9·0

RHEUMATISM AND HEART DISEASE IN CHILDREN.—An anonymous lady has given £12,000 to the Children's Home Hospital, Strathblane, Stirlingshire, to equip and partially endow a home for children recovering from rheumatism and resultant affections of the heart. The home will be the first of its kind in Scotland, and Dr. Leonard Findlay is to be consulting physician.

TUBERCULOSIS WEEK-END CONFERENCE.

LONDON, NOV. 19TH–22ND, 1926.

THE first meeting of a Conference arranged by the Tuberculosis Society and the Superintendents of Tuberculosis Institutions was held at the House of the Royal Society of Medicine on Friday, Nov. 19th, under the chairmanship of Dr. JAMES WATT, when Dr. O. STRANDBERG, of the Finsen Institute, Copenhagen, read a paper on

Heliotherapy and Artificial Sunlight

in the Treatment of Tuberculosis, and particularly Tuberculosis of the Larynx. Speaking in fluent English, Dr. Strandberg stated that the midday sun in the southern Alps and lowlands and in Switzerland contained the healing rays in their most active form, and that a lamp for the production of these rays should, like the sun, show a continuous spectrum, and possess the greatest number of blue, violet, and ultra-violet and also luminous heat-rays. It is, he said, only the carbon arc lamp that gives a continuous spectrum, whereas all other lamps show a line spectrum —i.e., luminous lines broken by dark intervals. At the Finsen Institute two types of carbon lamp are used—one large, using 75 amps. at 55 volts, the other small, using 20 amps. at 55 volts. Seventy-five amps. is the highest practicable current that can be utilised to give with 55 volts a powerful, chemically active, and quietly burning light. The upper carbon of the 75 amp. lamp should be the larger and thicker (300 × 31 mm.) and attached to the positive pole. The lower carbon should measure 300 × 22 mm. and be attached to the negative pole. Corresponding measurements for the smaller lamp should be: upper carbon 300 × 12 mm., lower carbon 300 × 8 mm. The lecturer showed many of the various types of lamps on the screen, and detailed his objections to their use mainly on the grounds that their voltage was too high or their ampèrage too low, as well as on the ground that several of them give a broken spectrum. He then described how the apparatus should be installed and applied, with the necessary precautions to take. The lamps should not be allowed to swing, but slide up and down on their guide-rods; draughts should be minimised not only in the interest of the patient, but to keep the lamp as steady as possible; the walls should be distempered in a dark colour to avoid the discomfort of reflected heat-rays and the carbons should be so adjusted as to throw a cone of light upon the patient. Two large lamps will suffice for eight patients, sitting astride upon chairs, any unequal distribution of the total light being compensated by occasional exchange of position.

The duration of exposure will depend, said Dr. Strandberg, on the local reactions, blisters, erythema, &c., and the general condition of the patient. Thus, patients with lung disease should have 10 to 15 minutes' exposure to begin with, and those without lung complications may have 25 to 30 minutes' exposure from the first. Children, of course, should have shorter exposures; afterwards a tepid shower bath is useful. Severe heart disease, arterio-sclerosis, and nephritis of non-tuberculous origin are contra-indications to this form of treatment. Slight rises of temperature (100°–101°F. per rectum) are not a contra-indication, but where the temperature exceeds 102° the baths should be stopped for a day or two, and then, beginning with reduced exposures, gradually increased. Hæmoptysis, in Dr. Strandberg's opinion and experience, is not a contra-indication. Out of 147 patients treated, only 2 had hæmoptysis who never had it before. Light treatment of tuberculous laryngitis should be combined with local treatment, the galvano-cautery, excision, &c., and local treatment should begin when the patient's temperature has nearly fallen to normal and his general condition has improved, since the whole object of the light baths is to alter the biological immunity reaction. The treatment should be continued for four to six weeks after all signs have disappeared. Combined pulmonary and laryngeal cases should be treated with small doses. Deflected sunlight treatment of the larynx is useless because only a small amount of the light can be utilised; it is impossible or difficult to light up the affected spots, and the chemical components of the light are absorbed by the mirrors. Pictures of various methods of local application of light to the larynx were shown, amongst them, Cemach's with Kromayer mercury-vapour lamp, and Wessely's, which, after cocainisation, utilises Killian's suspension method or Seiffert's autoscope. However good the results of such treatment may be they cannot be due to local effects. Probably they are the result of a more or less total exposure assisted by the faucial illumination.

Turning to figures, Dr. Strandberg said that he has had 41 cases of *aural tuberculosis* treated by operation and by light. Of these, 9 are not yet completely dry, 1 died of phthisis, and in 23 cases a radical operation was rendered unnecessary. Sixty cases of *pulmonary tuberculosis* have been treated by Ostenfeldt at the Finsen Institute with the following results: Of 16 cases in Turban stage 1, 7 improved and 9 remained stationary. Of 17 in stage 2, 6 improved, 7 remained stationary, and 4 became worse. Of 25 in stage 3, 5 improved, 13 remained stationary, and 7 became worse. These figures seem to offer a strong argument in favour of light treatment in pulmonary tuberculosis, and still better results might be anticipated if it were to be carried out in a sanatorium. There were 203 cases of *tuberculosis of the larynx* submitted to light treatment. Of these, 11 still remain under treatment, 10 have improved, and 79, for one reason or another, have discontinued treatment. Of the 79, 45 improved, 13 remained unchanged, 9 became worse, and 12 died. Of the 113 cures, 77 were cases of purely intrinsic disease, 37 were both intrinsic and extrinsic, and 2 were extrinsic. These results confirm Sir StClair Thomson's dictum that the greater danger lies in cases of extrinsic tuberculosis.

The lecturer showed at the conclusion some coloured slides of laryngeal disease with the results of treatment.

Discussion.

Discussion was opened by Sir STCLAIR THOMSON, who paid a warm tribute to the work done by Dr. Strandberg at the Finsen Institute in Copenhagen. England, he said, was notoriously a slow starter, and after two years of agitation Midhurst had only now fitted a complete light installation. This method of treatment offered more chances of cure, but one should not forget that sanatorium treatment alone sometimes does a great deal of good, and at least as much as ever tuberculin did. Dr. Strandberg was to be congratulated on his results, and also on his frankness in publishing them. The Midhurst installation had been made in Copenhagen, and had been put in charge of a Danish nurse, so they had done everything to bring it up to date.

Mr. SOMERVILLE HASTINGS had visited Leysin and seen the sunlight treatment in operation there, and was convinced of its efficacy, since he was not struck by either their surgical or hygienic methods, and the good results must, therefore, have been due to the sun. As regards Wessely's treatment, which he had seen at Vienna, he said it had impressed him greatly because of the great relief it afforded to the pain on swallowing and other unpleasant complications of tuberculous laryngitis. His experience of light treatment in cases of lupus of the nasal passages, pharynx, and larynx was unfavourable, and the results were not so good as with the cautery.

Dr. A. EIDENOW gave the results of his researches, along with Dr. Leonard Hill, and others, into the employment of lamps of various types. He said that there is no arc which gives a continuous spectrum,

the spectrum of the carbon arc becoming interrupted in the lowest wave-lengths. Only the lower wave-lengths produce erythema and erythema is the important factor, since it can raise the hæmobactericidal power of the skin. Those who suffer from chronic tuberculosis have a very low blood resistance—i.e., a low hæmobactericidal power. Hence the necessity for very careful dosage. Excessive dosage, whether by arc or Hg vapour, lowers the bactericidal power of the blood, and makes the patient worse, and in animals will hasten death. There is, too, a definite optimum area of skin to be irradiated so as to have the most favourable influence on the bactericidal power of the blood—in the case of the rabbit, 20–24 sq. cm. In the matter of technique, then, a comparatively small area of the body (about one-fourth) should be irradiated with the production of a limited erythema, and the time to undertake local treatment is when the blood resistance is high. He congratulated Dr. Strandberg on his good results in a series of cases far more numerous than his own.

Sir JAMES DUNDAS-GRANT dealt with his experience of the Wessely treatment and the application of the so-called cosine law, that the intensity of light is proportional to the cosine of the angle of incidence.

Dr. STRANDBERG, in reply, reiterated his objections to Wessely's theory, that it is not really local treatment, and that quite as good results could be more easily obtained by placing the patient on a couch and giving him a total light bath.

Dr. WATT, in conveying the thanks of the meeting to Dr. Strandberg, paid tribute to his pioneer work in the treatment of tuberculosis by light.

On Saturday, Nov. 20th, there were excursions to various sanatoriums—Midhurst, Frimley, and King George V.—and the medical superintendents of these institutions acted as hosts.

On Monday, Nov. 22nd, a large number of visitors attended demonstrations at the Brompton Hospital by Dr. L. S. BURRELL, who exhibited amongst other objects of interest a compressed air chamber to hold five people, the value of which, according to Dr. Burrell, lies in the breathing of oxygen by patients in the chamber. He also showed a room in which several patients were seated round a steaming cauldron of creosote. The bronchi of a patient were then injected with a solution of lipiodol to discover a bronchiectatic cavity; the skin over the small space between the cricoid and thyroid cartilages was cocainised, and then an intratracheal injection of novocaine was given followed by a few c.cm. of lipiodol; very shortly afterwards the X ray of the lung was on view. Dr. Burrell also did a refill in a case of artificial pneumothorax and so concluded a demonstration of unusual interest and variety.

At 3 P.M., in the House of the Royal Society of Medicine, under the presidency of Dr. F. RUFENACHT WALTERS, Dr. P. F. ARMAND-DELILLE, of Paris, delivered an address on the

Diagnosis of Bronchiectasis and Lung Cavities by Intratracheal Injections of Lipiodol.

In cases, he said, where cavity was suspected but where tubercle bacilli were not present in the sputum and the X ray picture was not satisfactory, intratracheal injections of lipiodol made it possible to determine with absolute exactitude the topography of a cavity, and whether there was one or more. The procedure, due in the first instance to Sicard and Forestier, was, in his opinion, specially suitable for children. It could be adopted wherever the stethoscope gave evidence of a cavity without making it possible to say definitely that it was present. It was not a necessary procedure in cases of pulmonary tuberculosis when the sputum was found to contain tubercle bacilli, and at X ray examination the cavity was portrayed characteristically with a light centre and dark, defined circumference. Cavernous breath sounds and whispering pectoriloquy in the lower part of a lung might indicate either a cavity or a pleurisy, or a fibrosis (sclerosis) following a basal pneumonia with dilatation of the bronchi in some cases. Where there was partial pleurisy with a little pus it was important to know what connexion there might be between a basal cavity and other parts of the lung because of the possibility of operation. In such cases lipiodol was useful. Lipiodol was a strong solution of iodised oil warmed to blood heat (106° F.); 15–20 c.cm. were injected by means of a specially designed curved needle and trocar into the space between the cricoid and thyroid cartilages after cocainisation. By leaving the cannula in position a further 15–20 c.cm. could be injected if necessary.

In his own cases—60 in number, said Dr. Armand-Delille, only one, a girl of 15, had suffered from temporary dyspnœa; no other accident had followed, and there had never been any manifestation of iodism. The most useful application of the method was in cases of bronchiectasis. The disease showed very characteristic symptoms—long-continued cough, sputum, circulatory and trophic troubles, and physical signs in the middle and lower part of the lung. In such a case the X ray showed nothing but an irregular shadow, whereas with lipiodol dark spots, oval or round and of the size of a pea to a nut, were seen confluent with or adjacent to the bronchi. There were various types of dilatation: (1) Doigt de gant, or finger-glove; (2) cylindrical; (3) fusiform (common in children who had had whooping-cough or broncho-pneumonia); (4) ampullary; and (5) sclerosis with signs of irregular dilatation of the bronchi. The usefulness of the lipiodol method of diagnosis was not confined to such cases. It could also be used to show up cysts communicating with a bronchus, or an abscess which had penetrated upwards through the diaphragm. Finally, said Dr. Armand-Delille, the method had some therapeutic value, its repetition being sometimes followed by improvement in the patient's condition, such as lessening of cough and sputum.

Discussion.

Dr. F. G. CHANDLER considered the intratracheal injection of lipiodol a method of precision in the diagnosis of bronchiectasis, and stated that he had used it in 50 cases at Victoria Park Hospital. He gave details of some cases and showed numerous X ray pictures.

Dr. G. SCHRÖDER had used a 10–40 per cent. injection of iodipin, but had given it up in favour of bromipin as this was more fluid. He warned his hearers against its use in active tuberculosis of the lungs where it had produced severe focal and general reactions.

Dr. L. S. BURRELL showed X ray photographs of lipiodol in the normal lung and in a tuberculous cavity at the apex; he thought the method of value in some cases of neoplasm, the lipiodol stopping abruptly at the neoplasm and flowing into the normal lung on either side.

Dr. W. G. KINTON had found definite improvement in the condition of patients after two injections.

Dr. F. R. WALTERS conveyed the thanks of the Conference to Dr. Arnand-Delille, who replied briefly.

Resuming at 5 P.M.,

Dr. GEORG SCHRÖDER, of Schömberg, Würtemberg, read a paper on

Specific Stimulation Therapy and Protective Inoculation Measures in Tuberculosis.

As yet, he said, there were no specific remedies for tuberculosis in the human body that would either heal up the lesions or immunise the individual against infection; all remedies that might be regarded as specific had only a more or less specific stimulant action upon tuberculous tissue. The tuberculous patient was in a position of great delicacy as regards the so-called specifics, as these had the power of exciting the formation of tuberculous tissue. Both of these characters distinguished them from non-specific stimulant remedies (protein bodies, radiation, chemotherapeutic remedies). The specific stimulant remedies, continued Dr. Schröder, were not antigen. The antibody theory was not applicable here,

Nor were they immunising remedies. Sensitiveness to tuberculin—i.e., the increased tendency to inflammation of the tissues—so-called allergy—was a manifestation of immunity. In the tubercle-infected body every cell system was in a state of over-sensitiveness to the antigen and its products and also to all other stimuli. Only the living antigen gave rise to this allergy. Any artificial blunting of allergy, in the sense of Hayek, was to be avoided as of no value. In cases with so-called positive anergy, allergy rapidly returned; tuberculous metastases were seen more often in such cases, and visible tuberculous foci did not heal up, in spite of the so-called biological recovery. To maintain and increase allergy was the aim. For this purpose it was unnecessary to distinguish in practice between toxin sensitiveness and tubercle sensitiveness.

In choosing cases for specific stimulant therapy, said Dr. Schröder, the following points were helpful: (1) the clinical-anatomical nature; (2) the allergic behaviour; (3) the state of the blood. Contra-indications especially to be noted were high degrees of fever, tendency to metastasis in other organs, the more serious disturbances of the nervous system and of the organs of circulation, and the preponderantly exudative form of the tuberculosis. The employment of specific stimulant remedies in tuberculosis of children in the secondary stage was most questionable. The useful effect of specific remedies in patients was to be controlled: (1) by careful clinical observations; (2) by repeated testing of the allergic behaviour; (3) by regular blood- and serum-tests (blood count of Arneth, blood-sedimentation tests, lipase, and serum albumin values).

Vaccine Treatment with Living Virus and Protective Inoculations.

"We can only immunise against tubercle," said Dr. Schröder, "if we produce with a living virus a focus which is latent and does not spread." The best-known tuberculosis investigators were agreed on this fundamental point and protective inoculation against tubercle rested on this basis. Some had attempted immunisation with tubercle bacilli from cold-blooded animals (Möller, Friedmann). Selter employed vital tuberculin containing weak but still living tubercle bacilli. Recently Möller had recommended intracutaneous application of fully virulent virus; others, such as Calmette and Langer, employed for protective inoculation non-pathogenic strains of tubercle bacilli weakened in various ways. By personal investigation he was successful in making tubercle bacilli non-pathogenic by growing them in extracts of lymphocytic organs, and in obtaining some protection with his vaccine against bovine tubercle in rabbits, and increasing their resistance against subsequent virulent infection. Whether with any of these methods, which attempted an active immunisation, noteworthy cures of advancing tuberculosis in men were obtainable, was still in doubt. He was very sceptical about passive immunisation, and regarded serum treatment as nothing else than a non-specific stimulant therapy. Of non-specific remedies lipatren had given him the best results in this way. Specific therapy should always be carried out under the strictest clinical control, and usually in a hospital or sanatorium. In ambulant practice the control of patients necessary for these methods of treatment presented many difficulties. The general practitioner might perhaps be in a position to carry out the treatment. The results obtained by such methods could not be stated statistically. Separate cases alone decided the value of such remedies, and many patients profited by them in conjunction with other sanatorium methods.

Discussion.

Dr. HYSLOP THOMSON stated that in his opinion there was no specific therapeutic agent which healed or conferred immunity in tuberculosis; but specific therapy, together with sanatorium treatment, was useful in certain types of the disease. Tuberculin should always be given in minute and carefully gauged doses. Although tuberculin treatment had been largely discontinued in England, both in Germany and in France it was still employed. He believed in specific tuberculin therapy because post-mortem records showed that healing took place by a process of auto-inoculation, and resistance and disease were so evenly balanced that little was needed to turn the scale in the patient's favour with the production of sclerosis. He thought the reasons why tuberculin had gone out of use in England were: the number of tuberculins on the market, the absence of standardisation (he called attention in this respect to a League of Nations Committee on the standardisation of serums), and the variety of media employed for cultivation of the tubercle bacillus. He would like to know on what considerations cases for treatment should be selected, and what form of tuberculin should be administered. Personally he used the intradermal test in diagnosis.

Dr. G. MARSHALL advocated protective inoculation. Its value could be tested, for example, in the Zoological Gardens and in the case of human beings in religious and other communities where inmates are living under standardised conditions.

Dr. TRAILL had observed improvement with tuberculin in chronic cases of tuberculosis in which rest had not done any good. He called attention to the apparent variability of batches of serum from the same laboratories by reason of which similar results in similar cases could not be reproduced.

Dr. CAMPBELL THOMSON considered that tuberculin was useful in local disease, as well as in ocular troubles, but had not proved its value in pulmonary tuberculosis. Moreover, it was not always easy to dissociate the tuberculin treatment from sanatorium treatment.

Dr. T. R. ELLIOTT had used tuberculin for 14 years in pulmonary tuberculosis, but had given it up, using it now only in disease of eyes and lymph glands. Perhaps the cause of failure was that pulmonary tuberculosis was not usually a pure infection, but was complicated by secondary infections. He mentioned that he was experimenting at present with tuberculin administered to babies born of tuberculous mothers and removed at once to a special home for the purpose of protective inoculation.

Dr. ARMAND-DELILLE mentioned that he used *antigène méthylique* (Calmette), a preparation which acted exactly like tuberculin, giving good results without causing fever or undesirable reactions.

Dr. F. PARKES WEBER admired the manner in which Dr. Schröder had explained the modern attitude towards the theory of the action of tuberculin. Tuberculin was a toxin which the individual could accustom himself to some extent, as half the world did against tobacco and one-eighth of the world did against alcoholic drinks. This tolerance—mithridatism, as he called it—towards the toxin harmed the patient because it counteracted the particular effect on the reticulo-endothelial tissues which was one of the chief factors in the cure of tuberculosis.

Dr. WALTERS considered that a large number of individuals were not infected with tubercle until very late periods in life, and therefore it would be difficult to determine when to begin, and for how long to continue, protective inoculations of tuberculin. The selection of cases for injection was also difficult; it was the old problem of how to get hold of the early cases. Cumulative doses were very dangerous.

Dr. SCHRÖDER, in reply, extended a hearty invitation to his English hearers to attend the German congresses.

REBUILDING OF MIDDLESEX HOSPITAL.—Prince Arthur of Connaught last week explained the rebuilding plans to a meeting of subscribers. The new hospital will again take the "H" form, but the court-yard will be wider and all the general wards will be cross-ventilated. The west wing will be built first; it will afford accommodation for a gynæcological unit of 24 beds, the gift of an anonymous donor, and a children's unit of similar size. This portion of the hospital will be associated with the name of Mr. Bernhard Baron. The central cross-piece will be built next and the east wing along Cleveland-street last, the exterior will be of red brick and stone with classical details. His Royal Highness expressed the hope that in due course wards would be provided for paying patients, an object towards which the trustees of the second Lord Ludlow have given £10,000.

GENERAL MEDICAL COUNCIL.

PRESIDENT'S ADDRESS.

THE Winter Session of the General Medical Council was opened on Nov. 23rd, Sir DONALD MACALISTER presiding.

The PRESIDENT began by referring to the death since the last session of Sir Henry Morris, for ten years treasurer of the Council; Dr. J. C. McVail, for the same period Crown Member for Scotland; and Dr. D. N. Knox, who had represented for 12 years the Royal Faculty of Glasgow. Prof. L. P. Gamgee, he said, now took Sir Gilbert Barling's place as the representative of the University of Birmingham, while Sir Humphry Rolleston had resigned his place as representing the Royal College of Physicians of London but had returned as member for the University of Cambridge. He continued :—

Affairs in the Irish Free State.

"The Medical Act, 1926, of the Irish Free State has been continued from August 21st for successive periods of one month, and still by its operation maintains the previous arrangement by which the Medical Acts of this country are made applicable to Southern Ireland. I am informed that conferences have taken place between the Privy Council and other Government departments in this country, together with representatives of the Free State Government, on the question of our future medical relations. As a result proposals have been formulated for an amicable agreement between the Governments concerned. This agreement, if duly adopted and ratified, gives promise of a practicable *modus vivendi* which may be generally acceptable. Probably a further conference will be necessary for its final adjustment. But it must be ratified before the Free State Medical Act expires in February, or new legislation will be required.

New Brunswick.

"The Lord President was pleased to bring before His Majesty in Council the representations of the Executive Committee regarding a recent change of the law in New Brunswick, to which I made reference in June. These representations have been judged to be well-founded, and accordingly an Order in Council, dated Nov. 5th, 1926, has been issued, declaring that New Brunswick no longer affords to the registered medical practitioners of the United Kingdom such privileges of practising in the Province as to His Majesty seem just. The Order of Oct. 4th, 1913, by which reciprocity with New Brunswick was established, is therefore revoked, and medical diplomas and degrees hereafter granted in the Province will not be registrable in the Colonial List.

The British Pharmacopœia.

"The Lord President has further acceded to the request of the Council, formulated on June 4th, 1926, and has taken steps for the appointment of a small committee, on which the Council is represented, with power to make inquiries, to collect information, to receive evidence, and to make recommendations, on the question whether it is desirable to make any, and if so what, alterations in the existing law or practice relating to the preparation or publication of the British Pharmacopœia and to its adaptation to the requirements of the British Empire. I have grounds for stating that this committee is at present engaged in making inquiries and collecting information bearing on the subject of its reference.

The Poisons and Pharmacy and Dangerous Drugs Acts.

"Another committee, appointed by the Lord President, is sitting to consider the whole question of the scope and administration of the Poisons and Pharmacy Acts, and the regulations made thereunder, so far as poisons other than 'dangerous drugs' are concerned. On the nomination of the Executive Committee I have been appointed a member and have arranged to take part for the present in the Committee's inquiries and deliberations, which are now proceeding.

"The Secretary of State for the Home Department is authorised by the Dangerous Drugs Acts Regulations to refer the question whether a particular duly qualified medical practitioner is supplying, administering, or prescribing 'dangerous drugs,' for himself or others (otherwise than as required for medical treatment), to a tribunal of three practitioners in England and three in Scotland respectively, one of whom is to be nominated on behalf of this Council in each case. As speedy nominations were requested, the Executive Committee proposed Sir Humphry Rolleston for England and Dr. Ashley Mackintosh for Scotland, and by invitation sent up also the names of certain other members of the Council, empowered to act on the respective tribunals in the absence of those first named. The members proposed have agreed to act and have been duly approved by the Secretary of State."

Inspection of Indian Universities.

The President announced that Sir Norman Walker and Colonel Needham were revisiting India for a tour of visitation and inspection of the courses of study and examination required for university medical degrees in that country, and to make reports thereon to the Secretary of State for India and to the Council. The President indicated that the opportunities for observation, consultation, and conference offered by the University and other authorities of India would prove of essential service to the cause of medical education in India, while to the Council, as the body whose recognition of Indian medical diplomas for registration is by law equivalent to a guarantee of their sufficiency for efficient practice in medicine, surgery, and midwifery beyond the limits of India, the visitors' reports would be of primary importance and value. It is of interest, he said, to note that in other parts of the Empire a desire is manifested for similar visits by representatives of the Council. The Governments of the Straits Settlements and Federated Malay States have forwarded a cordial invitation to Sir Norman Walker and Colonel Needham to extend their tour to Singapore as official guests. The President had learned from the Deputy Governor that an inspection of the King Edward VII. College of Medicine, Singapore (whose diplomas are already "recognised") by the Council would be of much service, and the Executive Committee of the Council had recommended acceptance of the opportunity.

The President continued :—

Foreign Inspections.

"Sir Edward Coey Bigger has, during the autumn, been travelling in Canada, Australia, and New Zealand as a member of the Empire Parliamentary Delegation. He was provided with introductions, as a member of this Council, to a number of the medical authorities in these dominions. Though his stay at any one centre was perforce brief, I gather from his letters, and from those sent me by presidents, deans, and others, that his visits were everywhere welcomed, and that he was put in possession of information respecting curricula, examinations, &c., which cannot fail to be of interest and value to the Council. He was able also, while the guest of the Governor of Ceylon, to visit its medical college and to inform himself regarding its activities. These experiences suggest that as communications, aerial, marine and terrestrial, are gradually improved, the time may come when it will be feasible, as beyond question it would be mutually beneficial, to organise frequent and regular, rather than rare and occasional, visits to professional bodies overseas, who are occupied, like us, with problems of medical education and registration in distant parts of the Empire."

The New Medical Curriculum.

The President concluded by stating that the Examination Committee and the Education Committee had been actively engaged during the recess

in gathering information respecting the methods and standards of professional examination employed by the licensing bodies, and in ascertaining the extent to which the new medical curriculum is being brought into operation in the United Kingdom. "They may think it expedient," he said, "to present separate interim reports for the information of the Council on these subjects. The spheres of the two committees, however, include much common ground, and I understand that a joint conference may be proposed, for the coördination of their views and experience, before definite reports are submitted to you."

A vote of thanks to the President, proposed by Dr. W. Russell, seconded by Sir Norman Walker, was passed by the Council. The Registrar then read the official notification of the appointment to the Council of Dr. L. P. Gamgee, representing the University of Birmingham, and Sir Humphry Rolleston, Bt., representing the University of Cambridge; these members were introduced respectively by Sir Holburt Waring and Sir Robert Bolam. The Council proceeded to confirm disciplinary action taken by the Dental Board, and to receive reports from the Dental Education and Examination Committee. It then went on to consider a number of penal cases.

MEDICINE AND THE LAW.

Action for Negligence: Alleged Failure to Diagnose Fractured Collar-Bone.

THE action begun on Nov. 16th, in which Mr. E. H. Battershill claimed damages from Dr. A. C. Mann, of Lauderdale House, Gresham-road, Staines, for injuries alleged to be due to the latter's negligence and lack of skill, ended on the 22nd in the disagreement of the jury. Thus each side has to bear its own costs and the plaintiff is at liberty to begin a fresh action if he chooses. Mr. Justice Horridge made no novel pronouncement upon the responsibilities of medical practitioners, and the case depended, as usual, upon its own facts. The plaintiff's story was that he fell down last December and pitched upon his left shoulder. Dr. Mann was sent for, examined him, assured him nothing was broken, and advised putting the arm in a sling. Pain developed, and a fortnight after the accident the patient consulted another doctor, who diagnosed a severe fracture of the collar-bone. A radiograph then taken revealed a fracture and an overlapping of the broken parts to the extent of 1½ inches. The plaintiff's case was that an X ray photograph should have been taken in the first instance, and play was made with the following passage from the annual report of the Medical Defence Union: "In conclusion the president emphasises the urgent desirability of an X ray examination being made in every case of injury to a bone or joint." The main issues of fact appeared to be whether the fracture existed when Dr. Mann first made his examination and whether the displacement of the bone was then ascertainable. The scientific issues concerned the probability of the absence or presence of displacement and the correct treatment accordingly. Expert evidence was given by Sir George Cheatle for the plaintiff and by Sir Herbert Waterhouse, Sir Robert Jones, Sir Joseph Skevington, and Mr. Frank Romer for the defence. Mr. Romer described a case where a jockey (F. B. Rees) broke his collar-bone while racing, the fracture being in much the same spot as the plaintiff's; there had been no initial displacement, the periosteum keeping the bones in place until (during examination) the jockey lifted his arm, whereupon displacement occurred. Sir Joseph Skevington, during his cross-examination, stated that he thought the gap between Dr. Mann's visits on Dec. 9th and 13th was rather wide, and that the evidence of swelling and loss of use of the fingers on the 13th might have suggested a fresh diagnosis and recourse to radiography: but he added that he had known Dr. Mann for many years and had always found him careful and competent.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE:

ANNUAL DINNER.

AT the dinner of the Royal Society of Tropical Medicine and Hygiene, held on Monday last at the Hotel Victoria, London, Dr. Andrew Balfour, the President, in the chair, Lord Balfour was the principal guest. Mr. W. Ormsby-Gore, Under Secretary of State for the Colonies, and Sir Samuel Wilson, the Permanent Secretary, were also present.

Dr. ANDREW BALFOUR introduced Lord Balfour happily, saying that while he could not claim to be a relative of the distinguished statesman, he was of the same clan, and the identity of names in a recent visit to America had been valuable to him, while all the United States recognised Lord Balfour's pre-eminent position.

Lord BALFOUR proposed the toast of the Society, and recalled to his hearers the remarkable growth of inter-communication which had taken place in the past few years between the various divisions of scientific study. Until quite recent days, he said, men of science had remained absorbed in their particular specialties, doing splendid work, but regarding their separate problems from separate standpoints. This was changing, and he pointed to the proceedings which had just taken place at the Inter-Imperial Conference, where the section which had under its attention the various problems of research had recognised the extreme importance of inter-communication, as only by fusion of results could the needs of the world be met. Speaking of the Committee of Civil Research, he claimed for this body that, although it was young, it had already displayed energies which should make it a valuable instrument in the coördination of knowledge, and—as particularly bearing on the interests of those present—he alluded to the work done by the Committee in regard to the problem of the tsetse-fly in Africa. Lord Balfour found it appalling to reflect that, while the creation of the domestic animal was one of the greatest of prehistoric achievements, over a vast area in Africa the use of the domestic animal was prohibited by the ravages of flies. *Homo sapiens*, he said, might be the crown of creation, but the fact remained that he was having a very hard struggle in many places to retain his pre-eminence over organisms which certainly were not the crown of creation. Much investigation was called for by students of tropical medicine if only in this one direction; and in wishing prosperity to the Society he said he could not conceive a greater benefit to the work of the investigators than to have a home in London which, on their return, they could treat as a centre for the record and exchange of experiences. He knew that he had the endorsement of his audience in wishing long life to the Society.

Major E. E. AUSTIN, in reply, said that the particular things which he had been asked to bring out, in narrating the history, objects, and recent activities of the Society, were circulated in printed form among the guests who, he hoped, had read them. He alluded to James Cantlie as the original parent of the Society, in association with Patrick Manson, and pointing out how fortunate the Society had been in its various presidents, deplored the untimely death of Sir William Leishman. He concluded by urging the need of the Society for a house of its own, successful though it had been as a guest in the house of the Medical Society of London.

Mr. ORMSBY-GORE proposed the toast of "Britain in the Tropics and Its Defenders" in eloquent terms. He claimed that for a long period all our colonial possessions had been administered with a view of advancing the welfare of the native peoples, and above all things, he said, the benefit which was most required to turn perilous localities into veritable health resorts was organised medical science. On the many journeys he had taken he had found every-

where evidence that the application of scientific knowledge was necessary for any real advances, and in the struggle of men against the attacks of insects nothing would prevail except that speed and mobility which could only be the outcome of applied science.

Sir JOSEPH COOK, High Commissioner for Australia, in the course of his reply to the toast, begged more of his audience to come to Australia and learn at first hand how fair the prospect was in that country and the territories under its administration. The toast was also replied to by Vice-Admiral Sir J. CHAMBERS, Director-General of the Royal Naval Medical Service.

Colonel W. P. MACARTHUR, Professor of Tropical Medicine in the Royal Army Medical College, proposed the health of the guests, which was replied to by Sir JOHN BLAND-SUTTON, who caused merriment among the guests by describing in strictly heraldic terms the coat-of-arms with its quarterings and crest which he would have suggested if he had been invited to design the armorial bearings of the Society.

The health of the Chairman was then proposed by Sir MATTHEW FELL, Director-General of the Army Medical Service, when Dr. BALFOUR, in reply, thanked Dr. C. M. Wenyon, the Secretary of the Society, and his collaborators for the pains which they had taken in regard to the function.

IMPERIAL CANCER RESEARCH FUND.

ANNUAL REPORT.

A MEETING of the General Committee of the Imperial Cancer Research Fund was held on Nov. 23rd, the Duke of Bedford presiding.

Sir HUMPHRY ROLLESTON, Chairman of the Executive Committee, moved the adoption of the annual report. He pointed out that scientific progress is characterised by successive periods of great activity, with periods of relative quiescence between. Each period of activity is started by some salient discovery or fruitful conception, the working out of which engages for a longer or shorter time the energies of those employed in that field. Cancer research exhibits this phenomenon in a very striking manner. The first period is that following the discovery by Jensen and Borrel of the transplantability of the malignant growths of the mouse. The second period followed the work of Fibiger, Yamagiwa and Ichikawa, and Tsutsui on the actual production of cancer anew, starting with normal animals. If the interest and activity aroused be taken as an indication, the work of Gye and Barnard on cancer causation by ultra-microscopic microbes published 18 months ago can be regarded as starting still a third period in cancer research. A number of papers have appeared in Europe and America, and, as was to be expected, agreement has not yet been reached. Both the facts and their interpretation are in dispute, and in these circumstances it is necessary to exercise patience and continue the investigations. Of the various lines of work bearing on the validity of the conception of Gye, at present in progress in the laboratories of the Imperial Cancer Research Fund, that of Dr. A. H. Begg is farthest advanced. Dr. Begg, whose researches are provided for by the generous donation of Lord Athelstan, has worked with the Rous fowl sarcoma and with another new growth of the domestic fowl which, although differing in structure, behaves in the same way. His results confirm the existence of two factors, as advanced by Gye, in the successful transmission of these tumours, and will shortly be published. The laborious, time-consuming character of these researches cannot be too strongly emphasised, and the public should realise the impossibility of a quick decision on the important problems involved.

Sir ANTHONY BOWLBY seconded the motion, which was unanimously carried.

The PRESIDENT referred to the part played by the late Sir Henry Morris in the initiation of the Imperial Cancer Research Fund and to the fact that the Fund must always depend on donations and legacies if activities were to be prosecuted on a useful scale. It was satisfactory to note that the office expenses, including salaries, printing, stationery and advertisements, worked out at less than 7 per cent. of the total expenditure.

Director's Report.

The report of Dr. J. A. MURRAY, F.R.S., the Director, states that the work of the laboratory during the past year has included studies arising out of the problems presented by the development of tar cancer in animals, in continuation of the earlier work, and the investigations undertaken to test the validity of the conclusions of Gye and Barnard on the ætiology of malignant new growths. A paper by Dr. W. Cramer has been published in the *British Journal of Experimental Pathology* (1926, vii., 1) dealing with the production of tar cancer, in which he has shown that the inception of new growths can be accelerated by an intervention at a site remote from that to which the tar is applied. The other investigations concerned with tar carcinogenesis at present in progress are not yet sufficiently far advanced for report. The Director continues :—

"The work of Dr. Gye, as was to be expected, has aroused the liveliest interest, and has led to a renewed world-wide study of the tumours of the domestic fowl of the Rous type. Several contributions to the discussion have already been published in Europe and in America. The work of Dr. Begg on the Rous tumour and another tumour of the fowl of different structure which behaves in the same way will shortly be published. In our opinion the results obtained can be harmonised with Gye's conceptions with less subsidiary assumption than on any other hypothesis, but some workers in other countries have recorded discordant results and have therefore drawn adverse conclusions. The divergence of opinion is eloquent of the technical difficulties of all investigations on the ultra-microscopic viruses in which a reliable visual control for their presence and identification is absent. In addition, the unfamiliarity of the idea of two distinct factors (each of which is inert by itself) as necessary for the induction of disease, has been a stumbling-block for many who are not familiar with the features of cancer which distinguish it from the recognised infections. It is, however, idle to enter on a speculative discussion of our results and those of other workers at the present time. The subject is essentially one for experimental treatment, and the discrepancies and differences of opinion can be resolved in no other way."

In order to gain an insight into the mechanism underlying the strict specificities of transmission in virus diseases, Dr. G. M. Findlay has undertaken an investigation of inoculable warts in man and in the dog, and of the remarkable epithelial proliferations known as fowl-pox and pigeon-pox. An account has been published, in collaboration with Dr. R. J. Ludford. of the cell-changes in the latter conditions.

The Director described other work in progress at the laboratories of the Fund, and referred to the visit paid by him to America in September, at the invitation of the American Society for the Control of Cancer, to attend the International Conference held at Mohonk, New York State. The conclusions[1] drawn up by the Committee of the Conference, while bringing nothing very new, embodied a sane and practical statement of the approved practice at the present time.

[1] THE LANCET, Oct. 16th, p. 825.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.—The Alvarenga Prize for 1926 has been awarded to Dr. P. S. Pelouze and Dr. F. S. Schofield, of Philadelphia, for an essay entitled The Gamophage. Competitors for next year's prize must send in their essays before May 1st, 1927 ; further details can be got from the Secretary of the College.

QUEEN ALEXANDRA MEMORIAL.—The contributions to this object now amount to £154,000, of which £74,000 has been raised in Scotland, £71,000 in England and Wales, and £9000 in Ireland. The money is to be used to widen the work of Queen Victoria's Jubilee Institute for Nurses. It is estimated that 3000 more nurses are needed to provide an adequate nursing service.

The Services.

R.A.M.C. COMMISSIONS.

A LIMITED number of commissions in the Royal Army Medical Corps, not exceeding 25, will be offered by nomination in January, 1927. Nominations have been allotted to London and Provincial Medical Schools, and intending candidates should apply to the various Deans. In addition, a certain number of nominations will remain at the disposal of the War Office. Candidates must be under 28 years of age on Jan. 31st, 1927, and will be required to present themselves in London for interview and medical examination towards the end of January. Full particulars may be obtained on application to the Under-Secretary of State, War Office, Whitehall, London, S.W. 1, and applications for consideration should reach the War Office not later than Jan. 10th next.

ROYAL ARMY MEDICAL CORPS.

Capt. H. Alcock to be Maj. (Prov.).

Capts. to be Majs.: K. A. M. Tomory, R. I. Sullivan (and remains secd.), A. R. Ross (Prov.), R. A. Anderson, and B. C. O. Sheridan.

Temp. Capt. R. W. D. Hewson relinquishes his commn. and is granted the rank of Capt.

W. H. D. Priest to be temp. Lt.

ARMY DENTAL CORPS.

Temp. Lt. R. G. Law, Dental Surg., Gen. List., to be Lt.

ARMY RESERVE OF OFFICERS.

G. R. Anderson de Montjoie Rudolf to be Lt.

TERRITORIAL ARMY.

Maj. R. Henry, having attained the age limit, is ret. and retains his rank with permission to wear the prescribed uniform.

Capt. W. Ainslie, having attained the age limit, relinquishes his commn. and retains his rank.

Capt. J. K. Holland, R.A.M.C., to be Div. Adjt., 53rd (Welsh) Div., vice Capt. J. D'A. Champney, vacated.

Lts. J. D. M. Cardell and A. F. G. Guinness to be Capts.

D. N. Buchanan, late Lt., 6th Bn. H.L.I., to be Lt.

General Hospitals.—Lt. K. V. Bailey, from the Gen. List, to be Lt.

ROYAL AIR FORCE.

Flying Officer W. A. Beck is transferred to the Reserve, Class D.2.

INDIAN MEDICAL SERVICE.

Temp. Lts. to be Temp. Capts.: Mohan Singh Segat, Chandu Lal Malhotra, Rajindar Singh Sandhu, Rama Shankar Varma, Shiv Das Suri, Kashi Ram Sahgal, Chandriam Ghurbamal Malkani.

To be Temp. Lts.: Patit Paban Chowdry, Abdul Majid Khan, Hari Krishna Handoo, Prabhakar Narayan Sathe, Balwant Rai Bhaskar, Sangham Lal, Shamsul Haque Wali Mohomed Siddiqui.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 13TH, 1926.

Notifications.—The following cases of infectious disease were notified during the week: Small-pox 218 (last week 302), scarlet fever 1905, diphtheria 1124, enteric fever 49, pneumonia 1155, puerperal fever 44, puerperal pyrexia 170, cerebro-spinal fever 8, acute poliomyelitis 29, acute polio-encephalitis 3, encephalitis lethargica 35, continued fever 1, dysentery 21, ophthalmia neonatorum 127. There were no cases of cholera, plague, or typhus fever notified during the week. The total of cases of acute poliomyelitis and polio-encephalitis taken together is substantially less than that of previous weeks, the only county notifying more than 3 cases being Middlesex (Enfield 2, Hendon 1, Southgate 1), with isolated cases from the counties of London, Cambridge, Chester, Dorset, Essex, Kent (Broadstairs 1), Lancaster, Lincoln, Nottingham, Rutland (Uppingham 2), Stafford, Surrey, Sussex East, Sussex West, Warwick, Wilts, Worcester, and Yorks West Riding. Of the 218 cases of small-pox 164 were notified from the county of Durham, 6 from Northumberland, 22 from Yorks West Riding, 6 from Lancaster (Ashton-in-Makerfield), and 17 from Derby.

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox, 3 (0) from enteric fever, 17 (0) from measles, 5 (1) from scarlet fever, 16 (3) from whooping-cough, 33 (6) from diphtheria, 91 (20) from diarrhœa and enteritis under two years, and 100 (26) from influenza. The figures in parentheses are those for London itself.

Correspondence.

"Audi alteram partem."

THE DISSOLUTION OF INSULIN.

To the Editor of THE LANCET.

SIR,—At the scientific meeting of the State Institute of Hygiene in Warsaw on Nov. 4th of this year, I read a paper on the separation from insulin of two extremely interesting new substances. This preliminary report can be amplified as follows.

From the insulin produced in our Institute (the clinical unit being 0·07 mg.) by an extremely mild fractionation procedure it was found that two substances could be obtained in a crystalline state, which are being designated as A and B.

The substance A is contained in the insulin in a large proportion, the yield corresponding to over half of the weight of insulin taken. Unlike insulin, it decreases the blood-sugar in 70–80 per cent. of normal rabbits, but in those with a high initial blood sugar it decreases the blood-sugar by 10–44 per cent. In rabbits with low initial blood-sugar it produces either no effect or causes increases from 5–20 per cent. This observation has led me to apply the substance clinically on diabetics and non-diabetics in conjunction with Dr. Marceli Landsberg, of Warsaw. From the small amount of cases investigated it would be premature as yet to reach a definite conclusion, but so far we had increases of blood-sugar or no effect in non-diabetics and marked decreases in diabetics.

As to the substance B, it represents a new hormone of complicated and not yet easily understood action. Substance B when injected or given per os causes marked and lasting increases in blood-sugar, so that we have produced hyperglycæmia and glycosuria in normal rabbits with six doses of 0·2 mg. of the substance per day. The substance B causes a high grade dilution of the blood with enormous retention of water, and if one takes that dilution into account blood-sugar increases amounted to over 800 per cent. The rabbits eventually died, and we are investigating the pathological changes, especially in the pancreas, on which a report will follow later.

As the substance B was found in insulin and the latter hormone in a number of organs, and, therefore, probably in food, and as it acts per os, one naturally suspects that this substance may have something to do with the causation of at least certain forms of diabetes.—I am, Sir, yours faithfully,

CASIMIR FUNK.

The Biochemical Department, State School of Hygiene, Warsaw, Poland, Nov. 20th, 1926.

THE MANAGEMENT OF INFECTIOUS DISEASE IN BOARDING-SCHOOLS.

To the Editor of THE LANCET.

SIR,—The address by Dr. A. I. Simey, printed in your last issue, is so carefully thought out and so illuminating that I hope he will pardon me if I make two comments from the point of view of one who was formerly in charge of the city fever hospital of one of our largest towns and who has since devoted himself to the pathology of infectious disease. Briefly stated these are as follows:—

(*a*) Dr. Simey mentions the structural difficulty in providing sufficient isolation accomodation form infectious cases. Has he tried bed, as distinct from ward, isolation? I found that, given marking and disinfection of the utensils of the patient and the wearing of rubber gloves and gown by the nurse when attending to him, it was safe to admit cases of almost any infection, except measles and chicken-pox, to a large ward occupied by patients suffering from a different disease without risk of cross-infection between the patient and the other occupants of the wards

In a school where sanatorium accommodation is necessarily limited, this would seem to be the method of choice.

(*b*) As regards the discharge of patients suffering from scarlet fever, it is, I think, nowadays generally agreed that the nasopharynx is the source of infection. I found that one could with safety discharge scarlatinal patients after four weeks, without regard to desquamation, provided that for a week at least they had been separated from contact with acute cases and had been treated by daily irrigation of the nose. After much experiment, I found that normal saline solution and weak (0·5 per cent.) permanganate of potash were the best, and did not defeat their purpose by setting up irritating catarrh. I found, however, that no amount of previous irrigation was efficacious if the patient was discharged from an acute ward.

The more I see of infectious disease, the less I believe in brick walls and disinfection. Everything seems to point to measures directed to the treatment of the patient himself and to aseptic nursing technique, and that is why Dr. Simey's address is, in my view, so excellent. Old shibboleths, however, die hard.

I am, Sir, yours faithfully,

A. KNYVETT GORDON, M.B. Camb.

Bedford-square, W.C., Nov. 21st, 1926.

PERFORATION OF GASTRIC ULCER DURING X RAY EXAMINATION.

To the Editor of THE LANCET.

SIR,—The case reported by Dr. F. W. Lang in your issue of Nov. 20th is probably an example of an occurrence which is less rare than is supposed. During the past three years I have seen two patients in whom it had happened during X ray examination, in each case at an overseas hospital. I also know of a case where an injudiciously conducted gastric analysis three days after a hæmatemesis was apparently the cause of recurrent hæmorrhage and death.

It is, I think, important to remember that severe pain or hæmorrhage is evidence of an active ulcerative process the extent of which is a matter of conjecture, and with this in mind it is well to postpone all strenuous forms of examination until the alleviation of symptoms gives reason for supposing that the penetration of the ulcer has been arrested. The rapid ingestion of a large mass of heavy material is the very antithesis of the dietetic treatment of gastric ulcer, and the recorded accidents are evidence of the soundness of the principles underlying this treatment.

I am, Sir, yours faithfully,

London, W., Nov. 19th, 1926. T. IZOD BENNETT.

RADICAL OPERATION FOR CARCINOMA OF THE ŒSOPHAGUS.

To the Editor of THE LANCET.

SIR,—I wish to make clear a statement in your report of my remarks at a meeting of the Section of Surgery of the Royal Society of Medicine on Nov. 3rd (THE LANCET, Nov. 13th, p. 1007). The case which I described was one in which an exploratory posterior mediastinotomy had been performed for carcinoma of the œsophagus, but in which the growth, situated just below the arch of the aorta, was too adherent to allow of its being separated from adjacent structures. I mentioned this case in order to illustrate that a mere exploratory mediastinotomy is not, per se, an extremely serious undertaking, as this patient lived for 11 months afterwards. I do not wish to give the impression that the patient lived 11 months after a partial œsophagectomy in the thoracic region, a feat which, as far as I know, has not yet been accomplished in this country.

I am, Sir, yours faithfully,

A. LAWRENCE ABEL.

Harley-street, W., Nov. 17th, 1926.

MEDICAL SCHOOLS AND THE LONDON UNIVERSITY BILL.

To the Editor of THE LANCET.

SIR,—The second reading of the University of London Bill brings to an issue certain considerations which I feel it my duty to lay by your favour before medical graduates of the University of London. I feel deeply responsible towards these graduates, whom I represent both upon the Senate and in Parliament. The large measure of support which was given to me at the Senate election last year, when my poll in the contested election was the largest ever recorded in any faculty—827, as against 281 cast for my opponent—makes me hope that I have interpreted the wishes of my constituents in the action I have taken in opposing the reconstitution suggested by the Departmental Committee. That reconstitution, it seems to me, has not been entirely realised by the medical schools. An admirable analysis of the effect upon the schools of the University of the regulations proposed has been contributed by Dr. Headlam, Bishop of Gloucester, in a letter to the *Times* :

"The control of the University is largely to be in the hands of outside members, and to be taken away from the representative body. Those who desire the independence and self-government of the Universities must feel that this is a most retrograde step. . . . Regulations are to be introduced by which the Senate may require the revision of the constitution, governing body, and statutes of a school of the University, and may interfere with the appeals issued by them, so that no . . . school will be able to appeal for money without the consent of the Council of the University, and will be obliged to consult the University before accepting benefactions. The University also may claim to appoint principal teachers in the schools. . . . The object of the Report and Bill is to give the Senate control over existing schools. If these regulations are given statutory authority the theological colleges will probably cease to exist as schools of the University."

Are the medical schools any more willing to accept these regulations than are, according to Dr. Headlam, the theological colleges? Is it acceptable to the medical schools that their principal teachers—a phrase which must include members of the medical staff—should in the ultimate issue be elected by a Finance Council, nearly half of whom will be Crown and municipal representatives, with no first-hand knowledge of the University and with political rather than educational qualifications for that post?

I happened to be in Chicago seven years ago at the moment when a member of the staff of a certain hospital school had been forced upon the staff by the direct personal influence of the mayor, exercised through municipal representatives upon the governing body of the school. The appointment was so unacceptable to the other members of the staff that they resigned *en bloc*. This action roused the public spirit of the citizens of Chicago, who, at a mass meeting, intimidated the mayor sufficiently to make him cancel the objectionable selection, whereupon the staff resumed their duties.

That seems to me an object lesson of what might happen if hospital appointments are to be influenced by political parties, municipal or governmental. The President, in the course of the debate on Friday, intimated that owing to representations from the theological colleges, he was prepared to insert amendments which should protect their position. I suggest that the medical schools might consider the advisability of following this example, by representations in the same quarter.

I am, Sir, yours faithfully,

E. GRAHAM LITTLE.

Wimpole-street, W., Nov. 22nd, 1926.

A HOSPITAL FILM.—The Prince of Wales last week visited the New Gallery for a private view of a Gaumont film depicting the work of King Edward's Fund. It is entitled "A Hundred Years of Progress," and illustrates a century's advance in the treatment of sickness and accidents.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At recent examinations the following candidates were successful in the undermentioned subjects :—

Surgery.—R. Bobo, Paris ; J. M. Moran, Manchester ; D. D. Stidston, St. Mary's Hosp. ; and L. D. Williams, Cardiff.
Medicine.—P. V. Bamford, London Hosp. ; R. Bobo, Paris ; S. B. Browning, Guy's Hosp. ; K. Roberts, Liverpool ; D. Jacobson, St. Bart.'s Hosp. ; and E. H. Waller, Charing Cross Hosp.
Forensic Medicine.—B. Best, Liverpool ; L. O. Jaggassar, St. Mary's Hosp. ; and H. Bundstrom, St. George's Hosp.
Midwifery.—B. Best, Liverpool ; J. De Rosa, Albany and London Hosp. ; B. Elliott, Durham ; L. J. Lawrie, London Hosp. ; L. W. Rose, Guy's Hosp. ; D. D. Stidston, St. Mary's Hosp. ; and N. W. Wood, Middlesex Hosp.

The Diploma of the Society, entitling them to practise medicine, surgery, and midwifery, was granted to S. B. Browning and J. M. Moran.

UNIVERSITY OF LONDON.—A meeting of the Senate was held on Nov. 17th, Sir William Beveridge, the Vice-Chancellor, being in the chair. Regulations were adopted for the recently established Academic Diploma in Anthropology. Mr. D. T. Harris, an internal student, of University College, was awarded the D.Sc. in Physiology for a thesis entitled Biological Action of Light. Sir Holburt Waring has been elected chairman of the Brown Animal Sanatory Institution Committee. The Semon Lecture (1926) will be given by Dr. A. Brown Kelly in the Lecture Hall of the Royal Society of Medicine, 1, Wimpole-street, London, W., on Thursday, Dec. 2nd, at 5 P.M. The subject will be Nervous Affections of the Œsophagus. Dr. Andrew Wylie, President of the Laryngological Section of the Royal Society of Medicine, will take the chair.

UNIVERSITY OF LEEDS.—The Council of the University has made the following additional appointments to the staff of the Cancer Laboratories, which are to be the main centre for cancer research in Yorkshire : Dr. J. S. Young, Lecturer in Experimental Pathology and Assistant Director of Cancer Research, and Mr. J. H. Channon, M.Sc., Biochemist in the Department of Experimental Pathology. Dr. Georgiana M. Duthie and Mr. G. A. Collinson, M.Sc., have been elected to research fellowships.

ROYAL DENTAL HOSPITAL : ANNUAL DINNER.—The annual dinner of the staff and past and present students of the Royal Dental Hospital of London was held on Nov. 20th at the Trocadero (Empire Rooms), at 7 P.M. Mr. W. H. Dolamore occupied the chair and presided over a large gathering, including representative guests. The Chairman, in proposing the toast of "Past and Present Students of the Royal Dental Hospital and Dental School," said with regard to the "Past Students" he would say, expressing his personal sentiments, that, first, they were professional men ; secondly, they were generous professional men ; and thirdly, they were generous professional men who carried out their work in a skilful manner, promoting the advancement of their profession. Three past students were associated with the three stages of metamorphosis through which the Royal Dental Hospital had passed. There was John Tomes, whose name was always selected as that of the representative of English dentistry. He was the moving spirit in the foundation of the hospital and in its early days spent much time searching in second-hand shops for fitments, so that old records would leave the impression that he was rather an antiquary than a scientist. John Tomes was also one of the few men in connexion with dentistry who had given his name to a part of the human body. The dental fibril is not spoken of as the dental fibril but is known as the Tomes fibril. Edwin Saunders was the man to whose generosity the hospital was indebted when it was moved from Soho-square to Leicester-square, and to him they were indebted for the establishment of the Saunders Prize. The man most associated with the next step was Morton Smale, with whose assistance the hospital moved from one side of St. Martin's-street to the other. Without his energy the authorities could never have ventured upon the expenditure of the large sum of money which the present building represents. Mr. Dolamore associated with the historical portion of the toast the name of Mr. J. H. Badcock, an old fellow student of his own who had wandered to Guy's, a school with which they had always had close association.

With regard to the present students he felt diffidence in speaking about them, because of the possible reply, wh ch was entrusted to the last winner of the Saunders scholarship. The present position of the hospital, which was the third subject of his remarks, he found a difficult thing to speak about. He had in the last few years occupied the post of treasurer to the Dental Board, and it had been his duty to be associated with the educational projects of that board, which fortunately was endowed with financial powers. Thus it devoted a considerable sum of money to dental schools, to the giving of bursaries to dental students, and to the promotion of research. But the board insisted that arrangements for the teaching should be adequate when making grants to carry out improvements which were necessary. As a result of such assistance it was certain that sooner or later new schools would also arise, and every school which had not met the situation would find competition up and down the country, probably in schools which were part and parcel of provincial universities.

The President concluded the address by welcoming cordially the support received from the Ministry of Health and the Dental Board.

Mr. Badcock, in reply, dealt with the changes which the school had undergone. To present students he urged the necessity of joining a defence union in order to protect themselves, so far as insurance was concerned, against accidents and illness ; and to join the British Dental Association "in that every man was a debtor to his profession." Mr. M. Lewis replied on behalf of the present students ; and the Dean, Mr. H. Stobie, on behalf of the school. After touching upon the changes in the staff, their loss by the deaths of Mr. J. Howard Mummery and Mr. Douglas Gabell, he recorded recent valuable gifts to the hospital. They were indebted to Mr. E. F. Ackery for the success of the "at home" that afternoon.

The toast of "The Visitors," proposed by Mr. A. L. Packham, was responded to by Prof. T. B. Johnston, Dean of Guy's Hospital Medical School. That of "The Chairman" was proposed by Mr. Norman G. Bennett.

SOCIETY OF M.O.H.'S ANNUAL DINNER.—The annual dinner of the Society of Medical Officers of Health was held in the Georgian Room at the Piccadilly Hotel on Nov. 18th, when the chair was taken by Dr. Robert Snell, M.O.H. for Coventry, and there was a large attendance of administrative and clinical health officers, largely of the younger generation. Sir Robert Bolam, in proposing "The Society," spoke feelingly of the difficulties of the preventive health service, crushed, as it was, between the upper millstone of its secular masters and the nether millstone of a public with a gift for passive resistance. For the solution of these difficulties he offered the cordial coöperation of their colleagues engaged in clinical and consulting practice. Dr. Snell, in reply, spoke of the present modest membership of his Society, numbering 2000 or so, in comparison with the 32,000 members of the British Medical Association, but foresaw the possibility of a time when these numbers might be reversed. He recounted the circumstances of the Society's birth in 1856, when 47 medical officers of health, none of whom had had any experience, were suddenly flooded on to the metropolitan area, so that they were obliged to meet and talk over how they should spend their time. Even now he doubted whether the country availed itself fully of their help, for the military authorities, who early in the present century had organised an *à la suite* sanitary service, had not yet found an emergency serious enough to call it up. "The Guests" were proposed by Dr. Charles Sanders, who remarked that a society might fairly be judged by the guests who assembled at its annual dinner, and spoke of the notable services to the public health rendered by those who were present. The Duchess of Atholl, in reply, said she regarded the school medical service as the most striking advance in public welfare made since 1902, including, as it did, the inspection and treatment of all the school children of the nation and the setting-up of open air, special and nursery schools. She felt that this work had gained much from the presence of women coöpted on education committees. Mr. Philip Snowden admitted that it was the first occasion on which he had met the public health service on a social occasion. For himself, he regretted he was no longer a local administrator, for, he said, "you see things being done." He paid a high tribute to the *esprit de corps*, the technical knowledge, and the enthusiasm of permanent officials. There was, he said, nothing in the world like our civil service, and the great problem "What to do with our educated boys ?" would find its solution in their absorption into public services which would brighten the lives and increase the health of the population at large. Mr. Snowden disclaimed personal familiarity with vital statistics, illustrating his disclaimer with a story of the newly-elected councillor who asked a more experienced colleague the meaning of a death-rate of 9·5. Nine dead, was the reply, and five on the point of death. But, Mr. Snowden went on, loss of working days from sickness was still six times larger than loss from industrial disputes ; financial economy in public health was met by the Proverb of Solomon : "There is that withholdeth more than is meet, but it tendeth only to want." Sir John Rose Bradford also replied in a few well-chosen phrases, in which he characterised the first duty of a physician as the prevention of disease. During the evening Mr.

Norman Williams delighted the company with some familiar songs and ballads. Besides the guests already mentioned there were present at the dinner Alderman Fred. Lee, Mayor of Coventry, Mr. G. A. Powell, Clerk of the Metropolitan Asylums Board, Sir Arthur Robinson, Lieut.-General Sir Michael Fell, Sir A. Boyd-Carpenter, M.P. for Coventry, and Dr. H. B. Brackenbury.

THE LATE DR. J. D. MCCRINDLE.—The death is announced, on Nov. 19th, of Dr. James Doig McCrindle, for many years medical officer of health for the borough of Northampton.

NEW SUNLIGHT CLINICS.—Princess Marie Louise has opened an artificial sunlight clinic at the Mildmay Memorial Hospital, Islington.—Sunlight and X ray departments were opened at Wigan Infirmary last week by Dr. Robert Knox.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Thursday, Dec. 2nd, at 5 P.M., at the house of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., Dr. John Parkinson will lecture for the Fellowship on Cardiac Emergencies. The lecture will be free to members of the medical profession. There will be a two weeks' course from Dec. 6th at the Infants Hospital, under the direction of Dr. Eric Pritchard. It will include demonstrations and lectures, and visits to the Model Pasteurising Plant at Willesden, to Thavies' Inn, and to the Nursery Training School. Courses in obstetrics can be arranged at the Queen Charlotte's Hospital and the City of London Maternity Hospital, and the Fellowship can accommodate graduates with posts as clinical assistants at the Samaritan Hospital. In January there will be the following special courses: In medicine and surgery and the specialties at the Prince of Wales's General Hospital; in cardiology at the National Hospital for Diseases of the Heart (early application is desirable), in diseases of children at the Children's Clinic and the Royal Free Hospital, and in psychological medicine at the Bethlem Royal Hospital. A complete list of the special courses for 1927 may be had from the Secretary of the Fellowship at 1, Wimpole-street, London, W., who will also supply copies of other syllabuses, of the General Course Programme, and the *Post-Graduate Medical Journal*.

MEDICAL WOMEN'S FEDERATION.—A half-yearly meeting was held at Leeds on Oct. 22nd, with Dr. Christine Murrell, President of the Federation, in the chair. The national corresponding secretary of the Medical Women's International Association presented a report on the successful meeting of the council of the Association held on August 25th to 28th in Prague. The usual report was made on underpaid posts advertised during the last six months. In all cases where posts were offered at less than the B.M.A. minimum the Federation had written to the women candidates urging them to retire. It was a matter of great satisfaction that of the women who had accepted such posts not one was a member of the Federation. The Loan Fund of the Federation continues to prove of great use to members Sincere thanks were tendered to Dr. Christine Murrell for establishing a new fund, the John Rains Memorial Loan Fund, in memory of her grandfather, Mr. John Rains, and of his active interest in the education of medical women. It will be subject to the same regulations as the Federation Loan Fund, its object being to make loans to medical women, especially to those starting in practice.

A meeting of the London Association of the Federation was held on Nov. 9th, Miss Elizabeth Bolton, the President, being in the chair. Miss Ida C. Mann read a paper on Routine Examination of the Eyes as an aid to Diagnosis. She emphasized the importance of routine examination of the eyes, including an ophthalmoscopic examination. The cases of ocular disease which most often came in the first instance to the general practitioner, and would be discovered by the routine tests, fell into two groups—namely, (1) those who complained of ocular symptoms and nothing else, and (2) those who complained of other symptoms and made no mention of their eyes. Errors of refraction might cause not only headache but feelings of depression, lack of concentration, fatigue, anxiety, and even, in some cases, nausea and dyspepsia. A suitable pair of glasses would do a hypermetropic clerical worker more good than a month's holiday and might often avert a definite breakdown. Even more important than the detection of errors of refraction was the early diagnosis of glaucoma. This was, of course, not actually a matter for the general practitioner, but the disease could at least be suspected. Miss Mann pointed out the danger of injections of atropin before operation in a subject of chronic glaucoma, and quoted six cases which had been treated for gastric influenza, intestinal colic, food poisoning, and other troubles, before advice was sought for the ocular condition. The communication was discussed by Dr. N. E. Dalby, Dr. E. Casson, Dr. A. Sheppard, Dr. R. Ford.

RONTGEN SOCIETY.—A general meeting of this society will be held on Tuesday, Dec. 7th, at 8.15 P.M., in the British Institute of Radiology, 32, Welbeck-street, London, W. Mr. Cuthbert Andrews will demonstrate the Seriascope, a new instrument for serial radiography, and Mr. W. V. Mayneord will give a paper on Crystal Structure.

INCOME-TAX ALLOWANCE FOR THE DOCTOR'S CAR.—On the question of income-tax allowances to a medical man in respect of his car, Lord Decies writes to point out that the allowance for wear and tear which had been granted to traders in respect of plant and machinery was extended to professions as from April, 1925, thus of course including all medical men. The allowance is one of approximately 10 per cent. on the current value of the car. Previously the only method of claim was by way of renewals and repairs, but the Income Taxpayers' Society, moving through its Parliamentary Committee, was instrumental in bringing about the change to the present system.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—At a meeting of this society held on Nov. 12th at the Miller General Hospital, Greenwich, Dr. H. Nockolds, the President, took the chair, and Mr. Harold Chapple gave an address on Abdominal Pain in Women. A group of women, he said, complained of pain after parturition. There were three tender spots, the sacro-iliac joints (right and left) and the lumbo-sacral joint. Pregnancy caused softening of the ligaments. The symphysis tended to be jammed down, and movement caused pain. Abdominal and lumbar exercises should be ordered after pregnancy and, if the pain persisted, forcible movement under an anæsthetic was required. Pain in the left iliac fossa was common, said Mr. Chapple, and pressure on the pelvic colon caused pain. Bands developed and fixed the colon, after which further bands produced rotation of the bowel on its long axis so that partial obstruction might follow. Abdominal operation was needed to free the bowel and constipation must be avoided. Frequently the ovary was caught with the bowel and dysmenorrhœa developed. The bursting of the Graafian follicle caused pain in these cases. A number of members joined in the discussion.

A PROPOSED CENTRAL INFORMATION BUREAU.—Sir Richard Gregory writes on behalf of the Council of the Association of Special Libraries and Information Bureaux: "As a result of successful conferences which have been held annually for the past three years the Association has been formed and is now in process of incorporation. The Council cordially invites the support of all organisations and bodies, commercial houses, industrial concerns, &c., which attach adequate importance to the collection, treatment, and dissemination of information relevant to their work. The new body will act as a channel through which any inquiring member may be put into direct touch with the source of information required. With the generous assistance of the Carnegie Trust the Association has in preparation a Directory of sources of specialised information in the British Isles; a copy of this will be sent free to each member, as soon as available. In addition it is hoped to establish by coöperation between interested parties, unified policies with respect to abstracting, cataloguing, indexing, and filing."

Membership of the Association is open to all interested bodies. The subscription has been fixed at £2 2*s*. per annum, and to ensure the establishment of a clearing house on an adequate scale not less than 500 members are required by March, 1927. Further details, including a form of application and a list of members will be furnished by the Secretary, 38, Bloomsbury-square, London, W.C. 1.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the Committee 40 cases were considered and £440 was voted to 31 applicants. The following is a summary of some of the cases relieved:—

Daughter, aged 66, of L.R.C.S. who died in 1883. When able to work made about 25*s*. a week teaching. Has not been strong since an attack of influenza two years ago, and is now unable to work. A friend left her £42 per annum and she received £16 from a relative. Her rent is 6*s*. a week. Voted £18 in 12 monthly instalments.

Widow, aged 58, of L.R.C.P. Was a clerk until Christmas, 1924, when she was discharged and has found it very difficult to get a post since that time. Late husband was an annuitant of the Fund. Applicant receives £52 from the rent of a house less interest on mortgage and ground rent and repairs. Voted £5 while seeking employment.

Daughter, aged 53, of M.D. St. And. who died in 1913. Has maintained herself by taking temporary posts as a clerk, and owing to recent illness has asked the Fund for further assistance. She has an annuity of £40 per annum. Rent and gas amount to £44 per annum. Private typewriting and clerical work brought her in about £78. Relieved twice, £17 10*s*.; voted £12 in 12 monthly instalments.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters Symonds, K.B.E., C.B., at 11, Chandos-street, Cavendish-square, London, W. 1.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Anti-Vivisection Petition.

Mr. LANSBURY presented a petition in the House of Commons on Tuesday, Nov. 23rd, signed by residents of the Wood Green, Hammersmith, and Lewisham districts praying that the House would pass a Bill withdrawing the sanction of the law from the practice of vivisection.

HOUSE OF LORDS.

THURSDAY, NOV. 18TH.

LEAD PAINT POISONING BILL.

THE House went into Committee on the Lead Paint (Protection Against Poisoning) Bill, the Earl of DONOUGHMORE in the chair.

Lord ARNOLD moved to insert before Clause 1 a new clause prohibiting the use of lead paint in painting the interior of buildings, except in the case of buildings which were excluded from the provisions of the section by an Order of the Secretary of State made after consultation with the organisations, if any, representative of the employers and workers; or painting with lead paint for artistic purposes, or the process of fine lining in such circumstances or in accordance with such conditions as might be prescribed. He said that he held that there was the strongest case for this new clause. It was admitted by the Government that the use of lead paint did lead to serious consequences. Statistics showed that every year some hundreds of men suffered from lead paint poisoning and from 40 to 50 men died every year from its effects. Since he had spoken a week previously the Home Secretary, in reply to a question in the House of Commons, had admitted that this year in the case of one firm in the Potteries there had been three cases of lead poisoning and that one case had proved fatal. The right hon. gentleman admitted that it was a bad case, but he said in effect that the regulations in regard to the system of exhaust ventilation had not been maintained in an efficient state. That was just the point which he (Lord ARNOLD) wished to make. They could not with sufficient effectiveness regulate these matters. Certainly they could not do it in regard to interior painting. He submitted that they ought not to "experiment"—to use the word of the Home Secretary—in a matter of this kind, particularly as doing so involved a breach of faith in respect of the Geneva Convention of 1921.

The Bishop of SOUTHWARK said he hoped very much that the Government would see their way to accept this amendment. He could not see how these Regulations were going to be carried into effect. It was not a matter in regard to which they could safely delay and wait to see how the Regulations worked. They were dealing with human lives and human suffering, and every year they delayed in dealing with this matter effectively added to the sum total of human suffering which could be prevented.

Lord DESBOROUGH said that he regretted that the Government could not possibly accept this new clause. Their lordships knew perfectly well that it was not generally acceptable. Canada was against it and also Australia and South Africa. A committee of experts who considered the whole position with the help of a medical subcommittee really preferred in their own minds a system of regulation rather than total prohibition of lead painting for inside work. If an important change of this character were introduced into the Bill there was not the smallest prospect, having regard to the other legislation which had to be dealt with, that the measure would become law. The Government believed that the desired object could be achieved by regulations. If experience proved the regulations to be insufficient the Government would then be quite prepared to bring in another Bill to deal with the matter.

Earl BEAUCHAMP supported the new clause.

The proposed new clause was negatived by 45 votes to 23.

On Clause 2 (which deals with the prohibition of the employment of women and young persons in painting buildings with lead paint),

Lord BALFOUR OF BURLEIGH moved an amendment to exclude women from the prohibition. He said that he supposed that the Government would rest their case for prohibition on medical grounds. The medical case for prohibition, he believed, rested partly on theory and partly on fact. The theory was that women were more susceptible to lead poisoning than men. He believed that that theory dated from the period when women were engaged, particularly in the Potteries, in very dangerous processes in connexion with lead. The women were on the whole very poorly paid and therefore there were predisposing causes leading to lead poisoning. That theory had become fossilised and crystallised on all subsequent legislation on the point. He did not think that any special inquiry had taken place since women were excluded by regulation in the case of the Potteries. The second point with regard to women was the undoubted fact that in their case lead poisoning led to great racial misfortune as far as the family was concerned. They were very much more likely to have miscarriages and still-births than healthy women, and this fact standing by itself was a good reason for exclusion, but it did not take any cognisance of the other fact that the suffering of the father from lead poisoning produced precisely the same effect. A good many foreign investigators had come to the conclusion that paternal lead poisoning was just as serious from the racial point of view as maternal lead poisoning. Apart from the medical side of the case, if prohibition was applied to women the Government were playing straight into the hands of one of the most powerful vested interests which existed—the trade-unions.

Lord DAWSON said he agreed that there was a prima facie objection to differentiation between the sexes and the onus of proof lay upon those who sought to impose differentiation. He doubted if that case existed, or at any rate if it existed sufficiently proved to justify prohibition. There was a further reason—namely, that it was a serious matter in any way to hinder women in seeking employment where they were able to engage in it. One of the most striking features of the last 50 years was the way in which woman had shown her aptitude in working out her own destiny. She had shown a sureness of touch in extending her activities from one sphere to another, and had widened her outlook in the main with striking success. He would place far more reliance upon the women themselves in deciding whether they should undertake the painting industry or not than on any Regulations. There were a great many occupations which women were precluded from undertaking on account of the fact that they were physically weaker than men. It was, therefore, the more important to give them every opportunity of entering skilled trades for which they were physically suitable; and the painting industry was one of those. They were strong enough to undertake it, the conditions were suitable, unless it could be proved that they were specially prone to the poison of lead. The question, therefore, was: Is the case proved that the proclivity of women is so marked, as compared with men, that it is necessary to prohibit them from taking part in this industry? He freely admitted that if they took the figures at present available there was very striking evidence that lead attacked women, especially young women, more often and with greater severity than men. But those figures were mainly taken from the old days in the Potteries, days which in a great measures were past. In those days the women to a large extent undertook the less skilled, the more dangerous forms of work. They were economically in a less fortunate position, and they were less protected; and there was certainly ground for the view that a large part of that proclivity of women was the result of their economic position rather than of their sex characteristics. At any rate, he would put it as high as this, that unless a further inquiry was undertaken in the light of modern knowledge he would doubt very much whether there was a case for excluding women from the painting trade. The next point was that it had now been established that far and away the most important route for the lead poison to enter the system was by the respiratory tract. The effects of dirty fingers and unclean mouths were indirect: they lowered nutrition, they made the people unhealthy, they lowered their resisting power. But, compared with the respiratory tract, these were relatively unimportant routes for the entry of the lead. If Clause 1 of this Bill, as proposed by the Government, was efficient in its working, and if it was true that by these Regulations, by substituting, that was, wet methods for dry methods, they could eliminate the dust, he thought it was quite likely that the greater proclivity of women would fall very nearly to zero. At any rate, he did not think it was safe to use figures and statistics from the days when the lead industry was not properly regulated. With regard to the very important question of pregnancy, it was quite true that lead was a dangerous poison, in that it produced abortion and miscarriages. But, here again, he thought that the women were quite capable of protecting themselves. If the Regulations under Clause 1 were adequate, if, in other words, dust was prevented—and it was dust that mattered and dust only: that was hardly too strong a statement—if the dust was prevented from entering the respiratory tract of these women they would not abort; and therefore if the measures were efficient the miscarriages would not take place. There was the further point referred to by Lord Balfour of Burleigh, that the lead poisoning, in bringing about miscarriages, very often went through the male as well as the female. The figures were most interesting as well as tragic. For example, there was one set of figures affecting workers in lead mines, where the wives had never worked in the lead mines and the men did work in the lead mines, and 40 per cent. of a given block of pregnancies

miscarried. There they had the poison carried by means of the man. And there were other figures bearing that out. Therefore, if they excluded the women and left the men and their Regulations were bad, they would still have miscarriages. If the Regulations were good—and he believed they were good—they would find that women and men would be protected alike. And the women's trade unions would see to it that the women were protected just as the men's trade unions would see to it that the men were protected. He would call their lordships' attention to Clause 1 of the Bill where the Secretary of State was able to order a medical examination. That got over many of the difficulties, because a medical examination would often discover the early stages of lead poisoning before the sufferer had any symptoms at all. And if in future, as he hoped, through the activities of the Industrial Research Council, a means was found whereby, by some biochemical test, they could say who was prone to lead poisoning and who was not, that would probably be a solution of this problem. The point must be borne in mind that there were a large number of people who could breathe lead with apparent impunity, just as there were large numbers of people who could drink alcohol with comparative impunity, and there were others who after a fortnight's work on lead were apt to be poisoned. Therefore, his suggestion was that the prohibition of women should be withdrawn from the Bill, that it should be left to the option of the Secretary of State to regulate whether they should take part in the industry or not, and he thought the suggestion was a good one that the whole question should go to the Industrial Research Council in the hope of finding a biochemical test whereby they might know whether people were prone or not. If these measures were carried out he thought it would meet all the conditions of the case and meet what to his mind was a great drawback—namely, differential legislation as between men and women.

Lord BANBURY supported the amendment.

Viscount HALDANE said Lord Dawson of Penn had pointed out the very unsatisfactory character of the *ex cathedra* replies that were given off-hand by medical authorities on a question like this. The effect of plumbism could only be ascertained by careful observation in hospitals and by other means, and by careful observation by qualified observers. He felt quite incapable of forming an opinion whether women were in greater danger of lead poisoning than men and of attaching any importance to authorities quoted either in their lordships' House or in the House of Commons. It was a question that needed careful inquiry, and the Government had two bodies—the Medical Research Committee and the Committee on Civil Research—which they could ask to conduct that inquiry.

Lord DESBOROUGH said that for the last 35 years in every Bill dealing with those industries in which lead poisoning was possible the employment of women and children had always been excluded. Noble lords were proposing something quite new. He was quite ready to admit that medical men were not agreed upon this matter. He had known very few cases in which doctors were absolutely agreed, but he thought that the balance of medical opinion was overwhelmingly on the side of the views which were the basis of the policy adopted by successive Governments for the last 35 years. He was sure that Lord Dawson of Penn would agree that these were authorities on this particular matter second to none in this or any other country. They had devoted their lives to the matter. Lead poisoning was a thing rather outside the purview of the ordinary practitioner and ought to be relegated to those who made an absolute speciality professionally of the question. The authorities were Sir Thomas Oliver and Sir Thomas Legge, the Senior Medical Inspector of Factories. This was the opinion of Sir Thomas Oliver: "On the whole, females, particularly young females, suffer more severely from plumbism than males." Sir Thomas Oliver also said: "My contention is that it is largely owing to the power of lead to inflict harm upon the reproductive organs of women that the female sex is so liable to be adversely influenced by the metal." Later on he said: "An interesting point in regard to maternity and plumbism is that while the expectant mother does not show any sign of plumbism and is apparently not suffering from lead poisoning, she transmits to her babe such a legacy of lead that the infant is born dead or dies shortly after birth." In his book on lead poisoning and lead absorption, which was written in conjunction with Sir Kenneth Goadby—also, he believed, an admitted authority—another well-known expert, Sir Thomas Legge, stated unequivocally that women were more susceptible to poisoning by lead than men. The question of lead poisoning was reviewed by a special commission on unhealthy processes appointed by the First International Labour Conference which met at Washington in 1919. There was a great gathering of experts, including a number from the chief industrial countries of Europe. In their report they stated: "What is then the general principle which should be applied in the case of women? That arrived at is one which will probably commend itself to all—namely, only when interference with the function of maternity can be shown to exist, should women's employment be made a bar and lead has been proved medically to be the chief, if not the only, intoxicant, in which this danger is present."

Lord PHILLIMORE supported the amendment.

The amendment was negatived by 35 votes to 17.

The remaining clauses were agreed to and the Bill was reported without amendment to the House.

HOUSE OF COMMONS.

WEDNESDAY, NOV. 17TH.

Guardians and Hospital Treatment.

Mr. WALTER BAKER asked the Minister of Health whether he was aware that the seat of a member of the Bristol board of guardians had been declared vacant because she received treatment following a motor accident in the vicinity of that institution; that it was impossible to remove the patient owing to the serious nature of the injuries, and that the cost of maintenance as a private patient was repaid in addition to the specialist's fees; and whether he was in a position to give an assurance that this special type of disqualification should be dealt with in the measure of Poor-law reform which he proposed to introduce during 1927.—Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied: My right hon. friend is aware of this case which presents a striking illustration of the anomalies prevailing under the existing law. He is not in a position to say when amending legislation will be introduced, but this matter should certainly receive attention whenever such legislation is considered.

Poor-law Reform.

Mr. SCURR asked the Minister of Health whether he proposed to introduce the Poor-law Reform Bill this session.—Sir KINGSLEY WOOD replied in the negative.

Mental Defective Charged with Attempted Murder.

Colonel DAY asked the Minister of Health whether his attention had been drawn to the charge of attempted murder against Reginald Farndale, aged 11 years, at Chester; and, as this lad was certified as a mental defective three years ago, would he state what action had been taken with a view to providing accommodation for such cases.—Mr. NEVILLE CHAMBERLAIN replied: My attention has been drawn to this case and I am informed that accommodation has been found for the lad in an institution in Gloucestershire. Unfortunately, there is at present a shortage of accommodation for mental defectives throughout the country; and local authorities are being urged to make further provision. The local authorities in the county of Cheshire are now considering a proposal to provide a joint institution to serve the whole county.

The Purity of White Bread.

Rear-Admiral BEAMISH asked the Minister of Health whether he was prepared to make an official pronouncement on the purity of white bread and thus allay the doubts concerning an article of food which was eaten by over 95 per cent. of the population; and whether he will instruct the departmental committee which was examining the question of flour treatment to extend its inquiries with a view to making an authoritative statement on the dietetic value of the people's staple foodstuff.—Mr. NEVILLE CHAMBERLAIN replied: This subject is referred to in a report entitled "Diet in Relation to Normal Nutrition," which was issued by my department a few years ago. I will consider whether it is desirable to extend the terms of reference of the departmental committee, but I am informed that they could not take up the subject referred to in the question until they have disposed of their present reference.

Ventilation on H.M. Ships and Tuberculosis.

Sir BERTRAM FALLE asked the Parliamentary Secretary to the Admiralty whether in view of the incidence of tuberculosis among ratings of the Royal Navy, he would institute an inquiry into whether the ventilating arrangements in living spaces below armour in His Majesty's ships were satisfactory; and whether the regulations laid down for the artificial ventilation of living spaces were properly observed.—Mr. BRIDGEMAN replied: The ventilating arrangements of H.M. ships are the subject of the most careful consideration in every case. The general principles to be followed when fitting the ships were settled by a representative committee a few years ago, and those principles are properly observed when settling details. Moreover, any representations from H.M. ships as to possible improvements in ventilation are considered and acted upon as far as possible. With regard to the last part of the question the necessity of this is considered so important that it is specially reported on by flag officers

at their inspection and a special inquiry is not considered necessary. I may add that I do not agree with the implied suggestion of my hon. friend that the incidence of tuberculosis in the Navy is exceptional.

Malaria in India.

Colonel DAY asked the Under Secretary of State for India what action was being taken by the Government of India with a view to abating malaria.—Earl WINTERTON replied: Public health being a transferred subject, antimalarial measures are a matter for the Provincial Governments except in regard to the health of the army and to central agencies and institutions for research. The measures undertaken include the destruction of breeding places of mosquitoes by oiling and drainage, &c., the prohibition of rice cultivation near certain towns, jungle cutting, propaganda work, the formation of antimalarial [coöperative societies, and the systematic distribution of quinine at low prices. At the same time the area under *cinchona* cultivation is being steadily increased with the object of making India self-supporting in the matter of quinine.

FRIDAY, NOV. 19TH.

LONDON UNIVERSITY BILL.

On the order for the second reading of the University of London Bill, which has already passed through the House of Lords,

Lord EUSTACE PERCY (President of the Board of Education) explained that the object of the measure was to appoint Statutory Commissioners to draw up statutes for the University of London in general accordance with the report of the departmental committee appointed by his predecessor, Mr. Trevelyan. The Bill followed the lines of the Oxford and Cambridge measures. The departmental committee in their report pointed out that the University had practically no financial resources which it could devote to the development of its teaching or research except the balance of examination fees, and yet the total income for the year 1923–24 of the 22 schools at the University in receipt of grants from the Treasury, including the incorporated colleges, amounted to nearly £1,000,000, of which about £360,000 represented recurrent grants from the University Grants Committee, and about £70,000 from the London County Council. The committee defined the object of their recommendations as follows: "We hope to enable the University Grants Committee, the London County Council, and other present or prospective grant-giving bodies to deal with a central University body as to the needs of the University and its colleges, and to make block grants to the University on the basis of such needs. It is fundamentally inconsistent with the idea of a self-governing university that it should not have sufficient financial resources and authority to initiate and pursue a policy of well-balanced development, and to prevent wasteful duplication and competition." While all were agreed, Lord E. Percy continued, that the financial impotence of the University of London, alone among all the universities of the country was an undesirable thing, yet so far as he knew there was no section of opinion in the University of London, and no one connected with it in any way, prepared to accept the present supreme governing body of the University—the Senate as at present constituted—as the authority for allocating grants from public bodies. The University of London had grown as Englishmen liked institutions to grow, on no fixed lines, developing to meet national needs as they arose without any preconceived principle of organisation. That character of the University ought to be preserved and there should be no question of standardising the University of London according to preconceived ideas or analogies with other universities. The departmental committee, broadly speaking, limited its main recommendations to two things. In the first place the committee proposed so to modify the present constitution of the Senate as to give representation on the Senate to the constituent schools of the University, who with the exception of King's College and University College, had no representation as such on the governing body. The second proposal of the committee was the establishment of a new finance council to deal with all questions of finance.

Dealing with criticism of the proposals of the Bill, Lord E. Percy said that it was alleged that the Board of Education had hitherto had nothing to do with the University and that this was a means of establishing Board of Education control over the University. As a matter of fact, the Board of Education had nothing to do with the Bill and would have nothing to do with the University statutes, or with the University, after the statutes were passed. It was well understood that the relations between the Government and the universities should be entirely in the hands of the Privy Council and that would be the position under this Bill. The second criticism related to the number of appointees of the Crown and of local authorities on the proposed new finance council. At present the Crown appointed four representatives on the Senate and the London County Council appointed two. That made six representatives in a total Senate of 26. It was proposed that the Crown and the London County Council should nô longer be represented on the Senate, but that those six members should be transferred to the council of 16 members. He agreed with the principle that the Crown and the public authorities should not in exchange for their grants exercise any control over University policy. But the reason for the proposed Crown representation was this: practically the whole of the finance of the University of London was at present in the hands of no university and no college body. It was in the hands of the University Grants Committee, a purely departmental, and if they liked, bureaucratic organisation. The reason for this Bill was to get rid of that undesirable control, and to hand over the allocation of Government money to a university body. It was desirable that the financial administration of a university should be carried out very largely with the assistance of elements outside the university competent in matters of business administration and finance. In London it was far more difficult to get a natural local business element on the council of the University than it was in provincial centres, and the sole object of Crown representation was not to retain any control for the Government over the allocation of grants, but to get in the most efficient way the most eminent men to supply that outside independent element. A third criticism related to the elimination of what was commonly known as the nominated third on the Senate. He recognised that that nominated third had done excellent work in the past, and was capable of doing excellent work. Its elimination was really due to the hard facts of the case. If it were true that they should not interfere with the representation of the graduates or the faculties on the governing body and on the Senate, and if it were true that they should in the University of London secure some organic representation of the schools of the University as such, they could not include that in the miscellaneous element in the Senate without making it so large a body as to be absolutely unworkable. It was only by chance that the nominated third did represent the outside independent element. It was constituted, for instance, of representatives from the Royal College of Surgeons and the Royal College of Medicine. At the present moment there was no representation of the medical schools in the University at all, but the Royal College of Surgeons and the Royal College of Medicine were there at the present moment far more as representatives of the medical schools than as representing outsiders. The same was true of the Incorporated Law Society and the Inns of Court. Finally, the City and Guilds Institute was there now far more as representing the Imperial College of Science than any general body of business opinion or interests. Therefore, the answer to the criticism with regard to the nominated third was that they could not get any proper organic representation of the schools of the University without eliminating some element, and moreover, the functions of the nominated third would be better secured by getting organic representation of the constituent schools on the Senate and by leaving the outside element to the council.

Mr. TREVELYAN (President of the Board of Education in the Labour Government) said that the Labour Party supported the Bill and hoped that it would become law this year.

Dr. LITTLE, the Member for the University, moved the rejection of the Bill. He said he was elected because he took up a position of opposition to the reconstitution of the University on the lines suggested by the Haldane Report. Those who opposed the Bill objected to it in the first place on the ground of its interference with the independence of the schools of the University. The schools were strong institutions having traditions of very many years and even of centuries. They were very largely financially independent and many of them would prefer to renounce grants altogether rather than receive grants on condition that their independence was taken away. The colleges had already raised a warning note against the proposed reconstitution, and he begged the House to have regard to what might happen to a university which was the largest in the world which was likely to be put into a position when its component schools, which were its glory, might depart from it. It was of great importance also to the University to maintain the Imperial link which could only be done by the external examinations. The grants that were proposed to be given constituted little more than a third of the revenue of the University, but the grant-giving bodies would control not only the application of the grants which they gave themselves, but all the funds of the University. He denied that the University of London was unwilling to accept changes, but they contended that it was better that changes should come by agreement, and to force a solution on the University would not be worthy of the House of Commons.

After further discussion the motion for the rejection of the Bill was negatived without a division, and the Bill was read a second time.

The money resolution in connexion with the Bill was also agreed to in Committee.

Encephalomyelitis after Vaccination.

Mr. GROVES asked the Minister of Health whether he had drawn the attention of the Committee on Vaccination, now sitting, to the cases of death from encephalomyelitis after vaccination; and whether he would direct the Committee to make an investigation into the whole question of the risk of spreading encephalomyelitis and other kindred diseases which appeared to be associated with the practice of vaccination.—Mr. NEVILLE CHAMBERLAIN replied: The answer to the first part of the question is in the affirmative. As regards the second part, one of the terms of reference of this Committee is to inquire into and report on the practical methods which are available in the light of modern knowledge to diminish or remove any risks which may result from vaccination.

Mr. TREVELYAN THOMSON asked the Minister of Health whether encephalomyelitis was mentioned as a cause of death on the certificates of death in the case of the seven deaths from that disease which occurred shortly after vaccination; whether an inquest was held on any of the cases in question; and whether the lymph used for the vaccinations was issued by his Department.—Mr. NEVILLE CHAMBERLAIN replied: I assume that the hon. Member is referring to seven cases recently discussed in the medical press, and I am informed that, so far as it has been possible to identify these fatalities, in none of the seven deaths was "encephalomyelitis" mentioned on the practitioner's certificate as a cause of death. An inquest was held in one case. In 4 of the 7 cases the lymph used for the vaccination was issued by my Department, and in one instance a proprietary lymph was used, but no information as to the source of the lymph used in the remaining two cases is now available. I may remind the hon. Member that these deaths occurred in 1912, 1922, and 1923.

MONDAY, NOV. 22ND.

Disease in Nigeria.

Viscount SANDON asked the Secretary of State for the Colonies what steps the Government of Nigeria were taking to deal with the critical health and mortality situation as indicated in the annual report.—Mr. AMERY replied: The Nigerian Government is taking every possible step to deal with the outbreaks of disease referred to in the report, which is for the year 1925. I am given to understand that the severe epidemics in the Northern Provinces did not recur in 1926. As regards plague in the Southern Provinces, a special visit was paid to Nigeria by Sir Edward Thornton, of the Union of South Africa, and as a result an energetic campaign has been undertaken with the aid of personnel borrowed from the Army. Thirty-one medical officers have been appointed to Nigeria since January, 1925, and the medical and sanitary departments have been expanded, and will be further enlarged. It is not correct to describe the situation as critical. In a country so large as Nigeria it is quite impossible to prevent the introduction of epidemic disease from time to time.

Condensed Skim Milk as Infants' Food.

Viscountess ASTOR asked the Minister of Health whether he was aware that the importation of condensed skim milk was prohibited in Cuba, the Bahamas, Chile, Argentine, British Honduras, British East Africa, the Straits Settlements, Italy, and other countries; and why he considered that it was not practicable to take similar steps to prevent the sale in this country of a product which he recognised to be unfit for babies.—Sir KINGSLEY WOOD replied: My right hon. friend is aware that the importation of condensed skimmed milk is prohibited in some countries. He is advised that though the absence of fat renders this article unfit for feeding babies, it is not unsuitable for other purposes. Containers in which condensed skim milk is sold are at present required to bear the label "unfit for babies," and from the point of view of the public health he sees no grounds so long as this warning is given, for prohibiting its importation into this country.

Viscountess ASTOR asked if the hon. gentleman would bear in mind that many Medical Officers of Health had reported that the labelling was quite inadequate as a means of ensuring that this condensed milk was not used for babies, and would it not be possible to get a more prominent label, as this was a real danger in many parts of the country.

Sir KINGSLEY WOOD said he would look into the question of the labelling and see what could be done.

Infantile Paralysis among Schoolboys.

Viscount SANDON asked the Minister of Health, in order to obviate the danger of infantile paralysis being spread by reason of boys being withdrawn from infected schools by parents, if he would take steps to prevent any school so infected from being closed down or the boys leaving.—Mr. NEVILLE CHAMBERLAIN replied: I am not empowered to take the course suggested, but I am always ready to arrange for the medical officers of my Department to confer with the school authorities as to the precautions appropriate to any outbreak of infectious disease.

TUESDAY, NOV. 23RD.

Hospitals and Coal Priority.

Col. LANE-FOX (Secretary for Mines) stated in reply to Mr. Briant that on the list of priority consumers of coal, hospitals, workhouses, and similar institutions stood first, and manufacturers of drugs and medicines last.

Segregation of Children from Mental Defectives.

Mr. DAY asked the Minister of Health what action had been taken by the Walsingham, Norfolk, board of guardians, following the visit of Inspector Bushell, to segregate children from mental defectives.—Sir KINGSLEY WOOD replied: All children over three years of age have now been removed from this institution; the only mentally deficient persons associating with the children in the institution are the mothers of those children.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

WEDNESDAY, Dec. 1st.—5.30 P.M., TROPICAL DISEASES AND PARASITOLOGY. Papers: Dr. R. T. Leiper: Tyranny of Nomenclatural Rules in Medicine. Dr. S. V. van Nierkerk: Hermaphroditism in Native Labourers in Johannesburg. Miss I. Hiles: Serological Tests in the Diagnosis of Hydatid Cyst. Dr. M. A. Azim: Coccidium in White Rats in England (communicated by Dr. J. Gordon Thomson). Dr. W. Broughton-Alcock: A Spirochætic Infection with Neuroses and Perforation of the Ileum. 8.30 P.M., SURGERY. Discussion: The Treatment of Gangrene of the Extremities. Opener: Prof. G. E. Gask. Mr. Sampson Handley will follow.

FRIDAY.—5 P.M., LARYNGOLOGY. Cases and specimens will be shown at 4 P.M. by Dr. Andrew Wylie (President), Mr. Frank Rose, Mr. Norman Patterson, and others. 8.30 P.M., ANÆSTHETICS. 8.15 P.M., OTOLOGY, MEDICINE, AND NEUROLOGY. Special Discussion: The Relation of Abnormalities of the Blood Pressure to Diseases of the Ear, to be opened by Sir William Milligan, followed by Dr. Lewis Smith (for the Section of Medicine), Dr. W. J. Adie (for the Section of Neurology), Mr. G. J. Jenkins (for the Section of Otology.)

SATURDAY.—10.30 A.M., OTOLOGY. Cases and specimens will be shown at 9.45 A.M. by Mr. Philip Franklin, Mr. Leslie Powell, Mr. Banks-Davies, and others. Papers: Mr. George Wilkinson: Have We a Resonance Theory of Hearing, or only a Resonance Hypothesis? Sir James Dundas-Grant: Remarks on the Use of Weber-Liel's Intratympanic Tube in Chronic Eustachian Catarrh.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, Nov. 29th, to SATURDAY, Dec. 4th.—FELLOWSHIP OF MEDICINE. Special lecture at the Medical Society, 11, Chandos-street, Cavendish-square, W. Thurs., Dec. 2nd, at 5 P.M., Dr. John Parkinson: Cardiac Emergencies. Free to members of the medical profession. —ROYAL WATERLOO HOSPITAL, Waterloo-road, S.E. Special course in medicine, surgery, and gynæcology. —ST. JOHN'S HOSPITAL, Leicester-square, W.C. Special course in Dermatology.—WEST END HOSPITAL FOR NERVOUS DISEASES, 73, Welbeck-street, W. Late afternoon course (5 P.M.) demonstrations upon selected cases. Further information from the Secretary of the Fellowship of Medicine.

UNIVERSITY COLLEGE, Gower-street, W.C.

WEDNESDAY, Nov. 24th.—5 P.M., Dr. C. H. Best: Insulin. (Third of four advanced lectures in Physiology.)

POST-GRADUATE HOSTEL, Imperial Hotel, Russell-square, W.C.

TUESDAY, Nov. 30th.—9 P.M., Mr. W. E. Miles: Fistula.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY, Nov. 29th.—10 A.M., Surgical Clinic. 2 P.M., Medical Cases in the Wards. 2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.

TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.

WEDNESDAY.—2.30 P.M. to 5 P.M., Medical Skin and Eye Clinics. Operations.

THURSDAY.—11.30 A.M., Dental Clinic. 2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose, and Throat Clinics. Operations.
FRIDAY.—10.30 A.M., Throat, Nose, and Ear Clinics. 2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.
On Monday, Nov. 29th, and Friday, Dec. 3rd, at 2.30 P.M., there will be special demonstrations of Surgical and Medical (Children) Cases by Mr. H. W. Carson and Dr. Bruce Williamson respectively.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, Nov. 29th.—10 A.M., Mr. Macdonald: Genito-Urinary Operations. 12 noon, Mr. Simmonds; Fractures and Applied Anatomy. 2 P.M., Dr. Scott Pinchin: Medical Out-patients.
TUESDAY.—12 noon, Dr. Burrell: Demonstrations of Chest Cases. 2 P.M., Mr. Addison: Operations. 2 P.M., Mr. Sinclair: Surgical Out-patients.
WEDNESDAY, Dec. 1st.—10.30 A.M., Dr. Burnford: Medical Wards. 2.30 P.M., Mr. Donald Armour: Surgical Wards. 2 P.M., Dr. Owen: Medical Out-patients.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Dept. 2 P.M., Mr. Simmonds: Surgical Out-patients. 2 P.M., Mr. Bishop Harman: Eye Dept.
FRIDAY.—10 A.M., Sir Henry Simson: Gynæcological Operations. 10.30 A.M., Dr. Dowling: Skin Dept. 2 P.M., Mr. Vlasto: Throat, Nose and Ear Dept.
SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy Dept. 10 A.M., Dr. Saunders: Medical Diseases of Children.
Operations, Medical and Surgical Out-patients, Special Departments, daily, 10 A.M. to 5 P.M., Saturdays, 10 A.M. to 1 P.M.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.
FRIDAY, Dec. 3rd.—4 P.M., Mr. Archer Ryland: Demonstration of Some Museum Specimens.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street.
THURSDAY, Dec. 2nd.—4 P.M., Dr. Theodore Thompson: Encephalitis in Children.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Nov. 30th.—5 P.M., Dr. J. H. Sequeira: Tuberculosis Cutis (2).
THURSDAY, Dec. 2nd.—5 P.M., Dr. Haldin-Davis: Acne. Rosacea.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, Nov. 30th.—4.15 P.M., Mr. F. H. Westmacott: Middle-Ear Suppuration.
FRIDAY.—4.15 P.M., Dr. G. R. Murray: Hypothyroidism and its Treatment.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.
FRIDAY, Dec. 3rd.—3.30 P.M., at the Royal Infirmary: Mr. Pooley: Infections of the Lacrymal System.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C.
WEDNESDAY, Dec. 1st.—4 P.M., Dr. P. C. Varrier-Jones: Settlements for Tuberculous Workers.

CHADWICK PUBLIC LECTURES.
THURSDAY, Dec. 2nd.—8 P.M. (in the Barnes Hall, Royal Society of Medicine), Sir Henry Gauvain: Sun, Sea, and Open Air in Relation to Health.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.
TUESDAY, Nov. 30th.—4 P.M., Mr. A. Ernest Maylard: The Bearing of Such Conditions as High Blood Pressure, Albuminuria and Glycosuria on the Performance of Surgical Operations. Discussion to be opened by Dr. Norman McLeod.

Appointments.

PICKWORTH, F. A., M.B., B.S. Lond., has been appointed Director to the Research Board for Mental Disease, City and University of Birmingham.

Vacancies.

For further information refer to the advertisement columns.

Birmingham and Midland Eye Hospital.—Two H.S.'s. £120 and £110 respectively.
Brighton, Borough Infectious Disease Hospital and Sanatorium. Res. M.O. £350.
Brighton, Royal Alexandra Hospital for Sick Children.—H.S. At rate of £100.
Brighton, Sussex Maternity and Women's Hospital.—Second Res. H.S. £100. Also Second Hon. Obstet. Phys.
Buxton and District Cottage Hospital.—Aural Surg.
Cambridge, Addenbrooke's Hospital.—H.S. At rate of £130.
Cambridge, Papworth Sanatorium and Village Settlement.—H.P. At rate of £100.
Cancer Hospital, Fulham-road, S.W.—Pathologist. £1000. Also H.S. At rate of £100.
Canterbury City and Borough, &c.—M.O.H. and School M.O. £800.
Charing Cross Hospital, W.C.—Asst. P.
City of London Hospital for Diseases of Heart and Lungs, Victoria Park, E.—Res. M.O. £250. H.P. At rate of £100. M.O. to Out-patient Dept., At rate of £150.
Dublin, Dr. Steevens' Hospital.—Reg. Surg.
Dudley Guest Hospital and Eye Infirmary.—H.S. and Asst. H.S. £175 and £150 respectively.
East African Medical Service.—Two Asst. Bacteriologists. £600.
General Lying-in Hospital, York-road, Lambeth, S.E.—Res. M.O. At rate of £100.
Hampstead General and North-West London Hospital, Haverstock-hill, N.W.—H.S. Also Cas. Surg. O. to Out-patient Dept. Each at rate of £100.
Hospital for Sick Children, Great Ormond-street, W.C.—H.P. and H.S. Each at rate of £50. Also Surg., Phys. to Out-patients. Anæsthetist. £15 15*s.*
Hull Royal Infirmary.—Asst. H.P. At rate of £130.
Infants Hospital, Vincent-square, Westminster.—Med. Ref. £120.
London Homœopathic Hospital.—Three Res. M.O.'s. At rate of £100.
London Hospital, E.—First Asst. and Reg. to one of the five Surgical Firms. £300.
London Lock Hospital, 91, Dean-street, W.—Clin. Assts. to Out-patients.
Lucknow University.—Prof. of Anatomy. Rs.1450 per mensem.
Macclesfield, Cheshire County Mental Hospital, Parkside.—Asst. M.O. £350.
Manchester Royal Infirmary.—Asst. Res. Surg. O. At rate of £150. Also Res. M.O. £200.
Margate, Royal Sea-Bathing Hospital for Surgical Tuberculosis.—Two H.S.'s. At rate of £200.
Melbourne University.—Director of Tubercular Research. £1000.
Mildmay Mission Hospital, Austin-street, Bethnal Green, E.—Sen and Jun. Res. M.O.'s. £140 and £100 respectively.
National Hospital, Queen-square, W.C.—Res. M.O. £200.
Norwich, Norfolk and Norwich Hospital.—H.P. and H.S. Each £120.
Nottinghamshire County Council, &c.—Asst. Sch. M.O. and Dist. M.O.H. £700.
Perth, James Murray's Royal Asylum.—Asst. Phys. £300.
Prince of Wales's General Hospital, N.—Hon. Clin. Assts.
Queen Mary's Hospital for the East-End, Stratford, E.—Res. M.O., H.S.'s., H.P.'s., &c.
Royal Army Medical Corps.—Commissions.
Ruthin Castle, North Wales.—Jun. P. At rate of £200.
Salford Royal Hospital.—Two Hon. Asst. Surgs.
St. John's Hospital, Lewisham, S.E.—Cas. O. At rate of £100.
Swansea General and Eye Hospital, Beck Laboratory.—Asst. Pathologist £500.
University College Hospital, Gower-street, W.C.—Two Clin. Assts. to X Ray Dept.
West Bromwich County Borough.—M.O.H. £1000.
West London Hospital, Hammersmith, W.—Phys. Also H.S., H.P., Res. Asst. Cas. O. and Aural and Ophth. H.S. Each at rate of £100.

The Chief Inspector of Factories announces the following vacant appointments for Certifying Factory Surgeons: Ripponden (Yorks), Earl Shilton (Leicestershire), Denbigh (Denbighshire), and Torrington (Devon).

Births, Marriages, and Deaths.

BIRTHS.

BAXTER.—On Nov. 13th, at Wollaston, Northants, the wife of Stephen E. Baxter, M.R.C.S., L.R.C.P., of a daughter.
COX.—On Nov. 19th, 1926, at 49, West Cliff, Preston, Lancashire, the wife of G. Lissant Cox, M.A., M.D., of a son.
KERR.—On Nov. 12th, at 64, Clarence Gate-gardens, N.W., Gwendolin, the wife of R. A. Kerr, *M.C.*, M.B., F.R.C.S., of a son.
KINGDON.—On Nov. 20th, at Knayton, Thirsk, Yorks, the wife of A. T. L. Kingdon, M.R.C.S., L.R.C.P., of a daughter.
STUTTAFORD.—On Nov. 20th, at Horning, near Wroxham, Norwich, the wife of W. J. E. Stuttaford, *M.C.*, M.R.C.S., L.R.C.P., of a daughter.

DEATHS.

COOPER.—On Nov. 20th, at Orchards-way, Highfield, Southampton, William Frank Cooper, L.R.C.S., L.R.C.P. Edin., aged 61.
JAMESON JOHNSTON.—On Oct. 8th, 1926, at 16, Fitzwilliam-place, Dublin, after a very short illness, George Jameson Johnston, M.A., F.R.S.C.I., late professor of surgery, Royal College of Surgeons, Ireland.
LOWE.—On Nov. 20th, at Lyndhurst-terrace, Weymouth, Charles Henry Lowe, M.R.C.S., late of Burton-on-Trent, aged 77.
LOWER.—On Nov. 20th, at St. Blazey, Cornwall, Nynian Yeo Lower, M.R.C.S., L.R.C.P., late of Presteign, Radnorshire, aged 54.
REID.—On Nov. 17th, at Richmond (Surrey), John Reid, M.A., M.D. Aberd., aged 71.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

THE ACTIVATED SLUDGE PROCESS OF SEWAGE TREATMENT.

Abridged from the Chadwick Lecture delivered at Southampton on Oct. 25th, 1926,

BY H. T. CALVERT, D.Sc., F.I.C.

AT an early date imperfect drains were laid with the object of keeping the neighbourhood of dwellings reasonably dry, but the solid waste products of human existence were allowed to accumulate near the dwellings, and it was only when a supply of water became available that the opportunity arose in the more thickly populated districts of swilling the refuse into the drains and thus into the nearest watercourse. This was the first step in rendering the dwellings more cleanly, but the resulting evils of river pollution made it necessary that further steps should be taken. At first there was little or no opposition to this growing pollution, and the general impression seemed to be that the use of rivers was to carry away sewage and trade refuse, but the burden which they were called upon to bear was beyond the power of their purifying ability. In spite of official inquiries matters were allowed to drift from bad to worse, but in 1876, as a result of a Royal Commission, the Rivers Pollution Prevention Act was passed, though it was not until county councils were formed in 1888 that any real progress was made and the necessity for treating sewage before discharge into rivers and streams was brought home to local sanitary authorities.

The Principle of Activation.

All artificial biological methods of sewage treatment—whether by means of contact beds, percolating filters, or activated sludge—are really developments of the "intermittent downward filtration through land" process of Frankland, and when once the principles underlying that process have been grasped the mechanism of these newer processes is easily understood. Oxygen is the purifying agent and the air furnishes a practically unlimited supply of this gas. If oxygen is brought in contact with organic matter at the ordinary temperature oxidation proceeds only slowly, but at higher temperatures the same process takes place more rapidly. It is then termed combustion, and this is the process which takes place in refuse incinerators. It is obviously impracticable to evaporate sewage and to oxidise the remaining organic matter in a refuse incinerator, and hence in sewage purification we have to aim at oxidising the organic matter by introducing oxygen in the concentrated or active form in which it occurs in various chemicals (such as permanganates) or by having present along with the oxygen some other substance which hurries up the process of oxidation. The former method proves more expensive than the latter, which is the essential feature of land treatment and artificial biological methods. The other substance which hurries up the process of oxidation is a biological one, either bacteria and other micro-organisms or even larger living organisms, but the actual mechanism of the change is not yet thoroughly understood. It would lead us too far from our subject to discuss the various theories which have been formulated to explain the biological oxidation of sewage, but it may serve a useful purpose to cite the analogous process of manufacturing vinegar from wine. Wine (for this purpose a weak solution of alcohol) is allowed to trickle over shavings which have been inoculated with a specific bacterium (*Mycoderma aceti*), and in doing so the alcohol in the wine is oxidised to acetic acid; the wine is converted into vinegar. Vinegar is an oxidation product of wine, just as carbon dioxide and nitrates are oxidation products of the organic matter in sewage. The analogy serves to suggest that the future may teach us to recognise, to cultivate, and to use specific organisms for the better oxidation of the organic matter of sewage.

Apart from all theories we are on safe ground if we say that the presence of organisms enables the oxygen of the air to oxidise the organic matter in sewage very rapidly, and it remains to consider what are the best methods of bringing the three reacting substances—the organic matter of the sewage, the oxygen of the air, and the organisms—into as intimate contact as possible. In land filtration each particle of the soil becomes coated with a gelatinous film derived from the organic matter of the sewage. This film forms a nidus for organisms and at the same time such an extensive surface that it attracts more organic matter out of the sewage and a partially purified liquid passes on to the next particle of soil, where the process is carried a stage further. Following the sewage comes a supply of air, and we thus have the three reacting substances together. Oxidation takes place and the gelatinous film on the soil particle is ready for another dose of sewage. In the case of contact beds and percolating filters the mechanism of the process is somewhat similar, except that the material of the beds and filters is very much larger in size than the soil particles, whilst in the case of the activated sludge process the particles of soil or other filtering material are entirely dispensed with and the gelatinous film or activated sludge is agitated with the sewage and air is either blown in or supplied at the surface of the agitated mixture of sewage and sludge.

From what has been said it will have been gathered that activated sludge is produced from the organic matter of sewage and that it is an oxidation product of this organic matter, but the exact function of the oxygen of the air in the production of activated sludge is as yet undetermined. It may be that it fosters the growth of micro-organisms pre-existing in the sewage or even in the air; or that it kills off another kind of micro-organism; or again it may be that it destroys certain constituents of the organic matter or sludge which are inimical to its use for the purpose of purifying further quantities of sewage; or the action may be a mechanical one in developing an enormous surface area on the sludge, but experiments have shown that the addition of chloroform, toluol, and other substances which kill micro-organisms, to a fully activated sludge impair or destroy its activity. We are therefore justified in assuming that activated sludge owes its activity, in great part at any rate, to the micro-organisms which it contains.

[Dr. Calvert described various methods of applying the activated sludge process to the treatment of sewage, notably those used in this country at Worcester, Manchester, Bury, Birmingham, and Sheffield respectively. He continued:—]

Certain Difficulties.

Before the process is applied to any sewage, or indeed before any kind of sewage treatment works are constructed, it is of prime importance that full information should be obtained as to the volume and nature of the sewage which may be expected to reach the works.

Included in the question of volume of sewage is the question of storm water, but the indications of existing plants are that if the final settling tanks are of sufficient capacity the plants are able to deal with three times the dry weather flow for periods which are generally likely to occur in times of storm. This, of course, presupposes that the first rush of storm water does not wash out of the sewers too much solid matter which has been deposited in the sewers during dry weather and become septic, and also that the flow of storm water is not so prolonged as to give rise to the phenomenon which has been termed "bulking" of the sludge.

This phenomenon, about which little definite information is available, is due to a condition which activated sludge assumes under certain unknown conditions. At times it is found that the sludge, in a comparatively short space of time, say a few hours, swells up and occupies a much larger volume of the tank space than normally. If the normal amount of sludge is, say, 20 per cent. (measured after settlement for one hour) it is sometimes found that the sludge, whilst containing no more dry solid matter, will occupy a volume twice as great or even greater. Under such circumstances it is often difficult to maintain the requisite amount of sludge in the aerating or agitating tank and to prevent it escaping with the effluent from the final settling tanks.

Included in the question of the nature of the sewage we have not only the variations in strength due to varying water consumption and to variations due to the class of the population tributary to the sewers, but also the question of any trade refuse which may be admitted to the sewers. Here our knowledge is not by any means definite, but the indications are that with domestic sewage the application of the process presents little difficulty. With trade refuse, however, the matter is otherwise, and difficulty has been experienced with such classes of refuse as spent gas liquor, brewery waste, oil and tar, and refuse from the manufacture of dyestuffs. The process is able to deal with certain proportions of these classes of refuse in the sewage, but it would appear that when once the sludge has acclimatised itself to those proportions any very material variation either up or down is likely to cause difficulty, either by depriving the sludge of its activity or by giving rise to "bulking."

These difficulties can be counteracted to some extent by the preliminary treatment to which the sewage is subjected before it enters the activated sludge tanks. Such preliminary treatment should always include screening and the removal of grit in detritus tanks.

The final settling tanks, following the aeration, agitation, or activated sludge tanks, serve the purpose of separating the activated sludge from the purified sewage and concentrating the former for return into the process tanks or for disposal of the surplus, for more is always produced than is required in the process tanks. The form of construction which has been almost always adopted for these tanks is that of the Dortmund or hopper-bottomed tank.

The volume of sludge which is returned from these tanks into the process tanks is regulated according to the amount which it is desired to maintain in the process; 15 or 20 per cent. (measured after settlement for one hour) may be regarded as an average amount.

It is difficult to give figures relating to the cost of the process, the power consumption, and the size of plant which may be regarded as the smallest economical unit, since local circumstances vary so enormously. The capital constructional costs of a plant to deal with a daily dry-weather flow of a million gallons of average domestic sewage, and with three times this volume in wet weather, would be under average conditions, approximately £30,000, and the annual working costs from £1200 to £1400. The power required has been found to vary from 15 to 30 h.p. per million gallons, but the price of electrical energy varies at the several plants from ½d. to 4d. per Board of Trade unit. Skilled supervision is necessary where the process is installed, and it is not usual, though it might be advantageous, to provide such supervision at small works where the daily dry-weather flow is less than, say, 500,000 gallons.

A Modified Process.

The methods of application of the activated sludge process aim at what is termed the complete purification of the sewage—that is, the production of an effluent which is non-putrescible and which is not likely to give rise to a nuisance when discharged even into the smallest watercourse. We will now turn our attention for a moment to a modification of the process which has been worked out at Birmingham and which promises a wider applicability.

At Birmingham the basic idea is to stop the purification process at an early stage, separate the partially purified liquid from the partially deactivated sludge, and reactivate the sludge separately for re-use in the process. The partially purified liquid is then passed on to existing percolating filters at a rate of two or three times the ordinary rate of feed. The short period of agitation enables the plant to be constructed correspondingly smaller, but the reactivation or reaeration of the sludge in the concentrated form is a more difficult matter than in the dilute form, so that the size of plant necessary for this part of the process is not reduced strictly in proportion to the concentration of the sludge. A large-scale plant to deal with 2½ million gallons per day has been operated on these lines for some time at Birmingham, and the size of the plant is now being trebled. Local conditions make the process peculiarly applicable. The settlement tanks are situated some four or five miles higher up the valley than the percolating filters, and in traversing the carrier between the two portions of the works the tank liquor becomes septic and is liable to give rise to nuisance from smell when it is sprayed on to the percolating filters. The partial treatment, or bio-flocculation, as it has been termed, for it consists essentially in a flocculation of the colloidal organic matter in the sewage, deprives the sewage of its septic character, so that no nuisance from smell is caused when the sewage is sprayed on to the filters, and owing to the high rate of feed of the filters the normal extension of filter area to meet the needs of increasing population is avoided. It is also probable that with this partially purified liquor the question of fly nuisance on the percolating filters will be lessened.

The process is a peculiarly inviting one, for there are few large towns in a position to afford absolutely new sewage disposal works, and most of the activated sludge plants installed in this country have been adjuncts to existing works which required extension. In most cases they deal with a portion of the whole flow of sewage and not with the whole flow and its daily variations. The process in use at Birmingham affords an opportunity of extending existing works, especially where percolating filters exist, without separating the works into two parts and without constructing further expensive percolating filters.

The Nature of Activated Sludge.

When seen in the aeration tanks activated sludge has a brown flocculent particulate appearance, and the experienced eye can judge its activity, knowing that a greyness and ultimately a blackness comes over it when it loses its activity. Under the microscope great differences are seen in activated sludge produced at different places.

From its mode of formation activated sludge contains the whole of the mineral matter present in the settleable and colloidal solids of the sewage, and such portions of the organic matter as have not been oxidised to gaseous or soluble forms. The particles of sludge are heterogeneous masses which have a tremendous surface per unit of weight, and they teem with life. Many forms of bacteria and other organisms have been recognised in the sludge, but up to the present our knowledge of these forms of life and their functions is very limited. It would appear that the phenomenon of "bulking," to which reference has been made, is associated with the preponderance of protozoal forms.

Activated sludge has a higher percentage nitrogen content than ordinary sewage sludge, and percentages of 5 or 7, measured on the absolutely dried sludge, are not uncommon.

Experiments have demonstrated that activated sludge possesses a higher manurial value than ordinary sewage sludge and that its nitrogen is as available for plant life as the nitrogen of sulphate of ammonia. For horticultural work and the dressing of golf greens and in market gardens the activated sludge produced at Milwaukee and Chicago has been dried and put up in 100 lb. bags and has found a ready sale. The problem of using activated sludge as a fertiliser has not yet been tackled seriously in this country, and at the various works where it is produced it has been dealt with much on the lines in which ordinary sewage sludge has been dealt with—by shallow ploughing into the land, by lagooning, or by drying on special drying beds and then spreading on the land. At most works it is mixed with the ordinary sewage sludge produced at another part of the works, but in no case has a preliminary dewatering in presses or filters with subsequent drying by heat in mechanical driers proved successful. At Milwaukee and other places in America very large plants have been constructed to deal with the sludge on these lines, but whether the success which is reported from these plants is due to some difference in the American sludges or to a want of vision on our part is not clear.

There is still a chasm of ignorance concerning the activated sludge process of sewage treatment. Much more research will have to be done before we are in a position to define the future possibilities of the process, but there is every reason to expect that these possibilities will be large.

OPHTHALMOLOGY IN EGYPT.

MODERN Egyptian ophthalmology, which owes its inception to the late Sir Ernest Cassel, who endowed the ophthalmic hospitals, and to Mr. A. F. MacCallan, who during his twenty years' residence in the country organised their work, continues to flourish. This year's report of the Ophthalmological Society of Egypt records an increase of three permanent and three travelling hospitals during the years 1924 and 1925, the number of new patients treated in the latter year having increased to 236,903. The main cause of blindness, as in all Eastern countries, is trachoma, but it is encouraging to read that whereas in 1919 the percentage of blindness in one or both eyes among the patients was 15·3, this percentage has been gradually reduced until in 1925 it was 10·4. There is an entertaining paper in the current *Bulletin* of the Society by Dr. Max Meyerhoff entitled New Light on the Early Period of Arabic Medical and Ophthalmological Science. It contains photographs of anatomical sketches from an Arabic manuscript of the year 1003 A.D., now preserved in a private library at Cairo. One of the diagrams shows the external ocular muscles, and another the decussation of the optic nerves at the chiasma.

DENTAL CARE OF MOTHERS AND YOUNG CHILDREN.

AT the quarterly meeting of the National Baby Week Council, held at Carnegie House on Nov. 17th, a discussion on Dental Care of Expectant and Nursing Mothers and Children under Five was opened by Dr. Helen P. Dent, of Leicester. She said that anæmia, digestive troubles, and debility followed an unhealthy mouth, and it was quite possible that pyorrhœa might have a share in the production of puerperal sepsis. There was much ignorance and prejudice amongst mothers in regard to the need and the safety of dental treatment during pregnancy. The provision of dental treatment for mothers should always be part of the local authority's maternity and child welfare scheme, and it should be available at least for all those attending the welfare centres, whether they were expectant or nursing at the time or not.—Dr. Harry Campbell said that caries was absolutely preventable, and pyorrhœa largely so; if teeth were kept perfectly clean they would never decay. The food given to young children was often not of a kind to develop mastication; the greater part of the right sort of food belonged to the vegetable kingdom, and a considerable proportion of farinaceous food which compelled grinding should be provided.—Dr. Vincent Denne emphasised the importance of the hereditary factor in connection with teeth. Many women suffered from malnutrition owing to diseased teeth. Toxins from the teeth were absorbed, and the infant was not only badly nourished but poisoned. A number of women were unable to suckle their infants; they could not elaborate the ingredients of breast-milk because they were damaged by bacterial infection. There was no reason why fillings should not be carried out at any time during pregnancy and extractions until quite an advanced stage, if proper precautions were taken.

A CHEQUE for 100 guineas has been sent to the New Health Society by a firm of cigarette manufacturers as an expression of regret for having inadvertently included in an advertisement a photograph of Sir W. Arbuthnot Lane.

A Discussion
ON THE
DIAGNOSIS AND TREATMENT OF COLITIS.

The Opening Paper in a Discussion on Colitis at the Medical Section of the Royal Society of Medicine, on Nov. 23rd, 1926,

BY ARTHUR F. HURST, M.D. OXF.,
F.R.C.P. LOND.,
PHYSICIAN TO GUY'S HOSPITAL.

THE Committee of the Medical Section of the Royal Society of Medicine has acted wisely in choosing colitis as a subject for discussion. No diagnosis is made more frequently and with less justification. In most cases in which colitis is diagnosed, a name indicating a definite organic disease is given to explain the presence of symptoms which are purely functional in origin, and much time and money are spent on vaccines, intestinal douches, and visits to spas, when nothing more than a little judicious psychotherapy is really required. On the other hand, the same diagnosis is often made when a much more serious condition—cancer of the colon or rectum—is really present, and weeks or months are allowed to pass with futile bacteriological or local treatment until all chances of cure by a radical operation are lost. It is clear, therefore, that colitis should never be diagnosed until a thorough investigation has shown that inflammation of the colon—nothing less and nothing more—is present.

There is nothing characteristic about the subjective symptoms of colitis. Pain and tenderness are often absent even in the most severe cases. All that can be said is that when discomfort or pain is present in the lower part of the abdomen the possibility of some disorder of the colon requires consideration.

1. THE STOOLS.

The state of the bowels is of much greater importance, but it is essential that the patient's statements should not be accepted without examining the stools. It is quite insufficient to ask the patient to send a specimen in a small bottle. Each stool passed on two or three consecutive days should be inspected by the clinician, in addition to the microscopical and bacteriological investigations carried out by the pathologist. It is essential, too, that the stools should be natural ones and not obtained after an aperient or an enema.

Mucus.—Many people, medical as well as lay, appear to regard the presence of mucus in the stools as evidence of "mucous colitis." It should be remembered, however, that it is a function of every healthy mucous membrane to secrete mucus under certain conditions. In the colon it is normally secreted in order to protect the mucous membrane from mechanical and chemical irritants. Consequently hard fæces are likely to be coated with mucus, which at the same time facilitates their evacuation; it is secreted chiefly in the pelvic colon, where the fæces normally accumulate before evacuation, and, in patients with dyschezia, in the rectum.

Most aperients act by irritating the mucous membrane of the bowel; it is therefore natural that, unless the dose is very small, the soft or liquid stools to which they give rise should often contain mucus, secreted with the object of diluting the chemical irritant and so protecting the mucous membrane from damage. A similar response frequently occurs after injecting fluid into the bowel; the old custom, still followed in some spas, of sending every patient for a trial Plombières douche and, if mucus is found in the ejected fluid, diagnosing colitis as the cause of the rheumatism, eczema, or neurasthenia, for which the patient seeks treatment, has no scientific foundation, because many healthy colons respond to the abnormal stimulation of the douche by secreting mucus, even if the secretion gradually diminishes during the "cure," as the mucous membrane becomes accustomed to the treatment. Whenever possible, I like to examine a patient with the sigmoidoscope without any preparation by aperients or lavage, as I have frequently observed that the latter cause the mucous membrane to be slightly redder than usual and excess of mucus to be present, even if nothing more irritating than normal saline solution is used for the douche. The temporary congestion and the secretion of mucus under these conditions are the natural response to the irritant and are not signs of colitis. The mucus secreted with hard fæces and after the use of aperients or enemas contains no pus cells, no red corpuscles, and no excess of broken-down epithelial cells; evidence of inflammation is entirely lacking.

In the condition badly described as muco-membranous colitis, shreds or large membranes of mucus are excreted with hard fæces. I have repeatedly sigmoidoscoped patients with this condition, and I have never seen the slightest sign of inflammation, unless they have been treated with irritating douches. Nearly 20 years ago I suggested that this condition was strictly analogous with asthma; I still think that the analogy holds good. In asthma over-activity of the vagus leads to spasm of the bronchial muscles and excessive secretion of mucus by the bronchial mucous membrane. Owing to the spasm the mucus is retained long enough to coagulate, and, as it is slowly extruded along the spiral bronchi, it is moulded into the characteristic Curschmann's spirals. In uncomplicated cases there is no bronchitis, and the mucus contains no pus cells or albumin; the secretion ceases abruptly when the spasm relaxes at the end of an attack, whether this occurs spontaneously or after an injection of adrenalin. In the colon the spasm and over-secretion of mucus, which have been shown experimentally to occur on stimulation of the pelvic nerves, are due to similar nervous influences; the mucus, which contains no albumin and no pus cells, is retained owing to the spasm and is coagulated by a ferment, mucinase, which Roger [1] has isolated from both the bronchial and intestinal mucous membrane. Just as asthma may be complicated by bronchitis as a result of treatment by irritating inhalations, so muco-membranous colic, as it should be called, may be complicated by a mild form of true colitis as a result of daily irritation by injudicious local treatment. It is this fact which led Mathieu many years ago to say that more cases of colitis came from Plombières than went there, and I have no doubt from my own experience that this is also true of many other spas, both at home and abroad, though matters have greatly improved since the war.

Pus and Blood.—In true colitis the mucus always contains pus cells, and in the severe forms small quantities of pure pus can often be recognised in the stools. Microscopical examination reveals the presence of disintegrated epithelial cells, often in large numbers, but the presence of such cells without pus or mucus is not necessarily pathological. The presence of blood recognisable with the naked eye in a stool containing mucus and pus, whether mixed with them or in separate bright or dark red clots, generally indicates the presence of ulceration, but smaller quantities, and especially isolated red corpuscles only recognisable with the microscope, may be present in acute colitis without actual ulceration. When the source of blood and pus in the stools is the inflamed mucous membrane of the colon, the stools are always soft and generally liquid. In the typical stool of ulcerative colitis isolated patches of liquid fæces, mucus, pus, and blood can generally be recognised, in addition to muco-pus and pus stained with blood. The presence of solid fragments of fæces in such a stool would point strongly to the presence of a growth. When blood is passed alone or on the surface of lumps of solid fæces, together perhaps with a little mucus or muco-pus, colitis is certainly not the cause, and a local source in the anal canal or rectum should be looked for.

2. BACTERIOLOGY.

Incredible as it may seem, I have often met with cases in which colitis has been diagnosed simply because an examination of the stools has shown that the relative proportion of streptococci to *B. coli* differs from what the pathologist regarded as normal, or because he has isolated certain organisms which he did not regard as normal inhabitants of the bowel. It is not sufficiently realised how wide are the variations in the fæcal flora of normal individuals, and how greatly the number, character, and proportion of the bacteria present are influenced by diet and by changes in the consistence of the fæces, such as may be caused by the use of an aperient. It is also, apparently, forgotten that pathogenic organisms in the sputum, tonsils, or teeth may find their way into the fæces without causing infection of the mucous membrane of the alimentary tract, and how even typhoid bacilli or other obviously pathogenic organisms may be discovered in perfectly healthy carriers long after they have recovered from the acute infection. Moreover, intestinal toxæmia may result from the absorption of poisons produced by excessive bacterial decomposition of proteins in the intestines in the complete absence of enteritis or colitis.

There can, of course, be no doubt that colitis of all kinds is almost always due to infection of the mucous membrane of the colon. But, unfortunately, our knowledge of the normal intestinal bacteriology is still so incomplete that it is rarely possible to recognise which of the organisms found in the stools of a definite case of colitis is responsible for the development of the disease. In most cases the abnormal flora in ulcerative colitis are not due to the infection, but to the fluid nature of the stools and the presence of excess of soluble protein, blood, and pus, which form a culture medium specially favourable for the growth of certain bacteria at the expense of others. When allowance was made for this, the evidence in favour of any particular organism found in the stools being the cause of the colitis has, in no single case coming under my observation, appeared to be conclusive.

In a report on an epidemic of "idiopathic ulcerative colitis," which resulted in 118 deaths in the Lancaster County Asylum in 1898, Gemmel [2] expressed his belief that this condition, which had always been well known in asylums, was really dysentery. Vedder and Duval,[3] working under Flexner in 1902, proved that epidemics of "dysentery" occurring in institutions in America were caused by the *B. dysenteriæ*, and two years later Eyre[4] showed that asylum dysentery in England was also caused by this organism. As the *B. dysenteriæ* is likely to be enormously outnumbered by the *B. coli* in the stools, the isolation of the former, except at the onset of acute cases, is extremely difficult. So far as I am aware, no bacteriologist has yet succeeded in isolating a dysentery organism from the stools in the sporadic disease as it occurs in England, but Dudgeon[5] has isolated the Flexner bacillus from material obtained from the surface of an ulcer through a sigmoidoscope in two cases. I was so struck in 1921 with the resemblance between the appearance of the colon seen with the sigmoidoscope in bacillary dysentery and in sporadic ulcerative colitis that I revived the suggestion made by Saundby[6] in 1906 and Hawkins[7] in 1909 that the latter might also be due to infection with the *B. dysenteriæ*, but in no case have my bacteriological colleagues been able to isolate the organisms from the stools or from swabs taken directly from the ulcers through the sigmoidoscope, and in no case has the patient's blood agglutinated any of the known strains of *B. dysenteriæ*.

In 1924 Barger,[8] of the Mayo Clinic, isolated a Gram-positive non-mannite-fermenting diplococcus from swabs taken through a proctoscope from the ulcers in 80 per cent. of 68 cases of ulcerative colitis, but in only 1 out of 20 healthy patients. Intravenous injections of the diplococcus produced similar lesions in rabbits and dogs. In a few cases the same organism was isolated from apical dental abscesses and from infected tonsils in patients suffering from the disease.

So far as I know these observations have remained unconfirmed until now. Dr. T. Houston, of Belfast, has, however, recently isolated a similar organism, but he is not yet convinced that Barger is correct in regarding it as the specific infective agent in sporadic ulcerative colitis. A recent paper on ulcerative colitis from the Mayo Clinic by Buie[9] raises a suspicion that the ulcerative colitis, from which Barger isolated his diplococcus, is not the same disease as that occurring in England. He refers to "the most significant phase" in its development being the appearance of miliary abscesses immediately beneath the superficial layer of the mucous membrane; these abscesses are said to rupture and leave miliary ulcers. I should have regarded this as a good description of the development of the ulcers in amœbic dysentery; I have never seen anything of the kind in ulcerative colitis and bacillary dysentery, in both of which the ulcers appear to result from superficial necrosis of the acutely inflamed mucous membrane.

3. THE SIGMOIDOSCOPE.

When, 18 years ago, I was invited to take part in the discussion on ulcerative colitis held in this Section, I declined, as I realised I had no knowledge of the clinical aspects of the disease. On reading the report of the meeting it is clear that Mr. J. P. Lockhart-Mummery, who had recently examined six cases with the sigmoidoscope, was the only speaker who was in a position to add anything to our knowledge of the disease, since it was first described in 1875 by Sir Samuel Wilks[10] and subsequently in 1888 by Sir William Hale-White[11] as a result of their observations in the post-mortem room at Guy's Hospital. Since 1908 I have passed the sigmoidoscope in every case in which disease of the colon has been suspected, and I have constantly urged upon others that its use should be regarded as within the province of the physician, just as much as that of the ophthalmoscope. Unfortunately, however, it is still often considered to be a surgical instrument, with the result that numerous cases of cancer, which could not be recognised without its aid, are diagnosed too late, and a totally wrong conception of colitis is still widely prevalent. Nobody would think of treating a case of tonsillitis without looking at the tonsils; it is even less justifiable to treat a case of colitis without looking at the colon, because the symptoms are far less distinctive, and the possibility of cancer can be excluded in no other way.

The sigmoidoscope can almost invariably be passed if the patient is in the knee-elbow position without any special preparation and without causing any pain. Ulcerative colitis can be recognised at the first glance, but the appearance it presents is indistinguishable from that of bacillary dysentery. On the other hand, amœbic dysentery presents a quite distinctive picture, and I have several times been able to diagnose it, occasionally in individuals who had never been abroad, when examination of the stools had failed to reveal either amœbæ or cysts; in every case the diagnosis was confirmed by complete recovery within a few days as a result of treatment with emetine.

If the mucous membrane of the rectum and pelvic colon is quite healthy, ulcerative colitis can be excluded, as the disease seems always to begin in the most distal segment of the colon and to persist there longer than in any other part. When, therefore, stools containing blood and pus are passed by a patient, in whom the sigmoidoscope has revealed no evidence of ulcerative colitis, a growth of the colon is almost certainly present, and if it is situated within 12 inches of the anus it should be possible to recognise it with the sigmoidoscope, even if it cannot be felt by either rectal or abdominal examination.

4. RADIOLOGICAL EVIDENCE.

Certain radiologists, whose work does not bring them into sufficiently close association with the clinical and pathological aspects of the cases they investigate, frequently diagnose catarrh of a part or the whole

of the colon from the appearances obtained with the X rays after an opaque meal. The evidence upon which they depend is very variable, but as the diagnosis is made independently of any pathological or other confirmation, it is, of course, completely unreliable. I have seen numerous patients, who have been treated for months or years for a colitis which they never had, but which had been diagnosed on radiological evidence alone; many had become confirmed hypochondriacs as a result. When the sigmoidoscope has revealed nothing abnormal and the symptoms point to the presence of some disease of the colon, a barium enema should be given. By this means alone is it possible to recognise diverticulitis, a comparatively common disease, which generally involves the iliac and pelvic colon, and which was formerly almost invariably mistaken for either a growth or colitis; it is, moreover, the only common cause of pericolitis sinistra. An opaque enema also often shows the presence of a growth at a stage when it is still impalpable and causes no delay in the transit of an opaque meal.

An X ray examination after an opaque enema should always be made in long-standing cases of ulcerative colitis which are not responding satisfactorily to treatment, as this may be due to the development of a stricture, the exact position and extent of which can be recognised in no other way. By this means the need for a short-circuiting operation was discovered in two of my cases, although there was nothing in the symptoms to suggest that obstruction was developing. The extent of the ulcerative process in the earlier stages can also be recognised with the X rays after an opaque meal by the disappearance of the normal haustration and the mottled appearance of the shadow, but as the whole colon is almost always involved, the examination rarely provides information which was not already available from the known pathological anatomy of the disease.

CLASSIFICATION.

Long-continued irritation of the colon by hard scybala or by aperients might theoretically produce a definite catarrh of the mucous membrane, but there is nothing about the stools or the sigmoidoscopic appearance which makes it possible to recognise such cases from those in which the mucous membrane is still healthy and simply responding to the irritation by the secretion of mucus. Moreover, symptoms and signs of irritation rapidly disappear when the cause is removed, though excess of mucus may continue to be passed for some time. Other mechanical irritants, such as excess of indigestible vegetable residue, and other chemical irritants, such as excess of mustard, pepper, or curry, may exert a similar action, but here, again, it is very doubtful whether they ever give rise to true catarrhal colitis.

On the other hand, the chemical and bacterial irritants resulting from the consumption of decomposing and infected food may leave behind a condition of chronic inflammation after the acute entero-colitis to which it at first gives rise has disappeared. It is necessary, however, to add that the chronic diarrhœa, which is an occasional sequel of acute food poisoning, is more often due to the achlorhydria caused by the associated acute gastritis than to colitis, as no inflammatory products are found in the stools, the sigmoidoscope shows no sign of inflammation, and the diarrhœa ceases abruptly when hydrochloric acid is administered, even if it has been present for several years.

Apart from the specific forms of colitis caused by infection with the *Amœba histolytica* and *B. dysenteriæ*, and sporadic ulcerative colitis with its clear-cut clinical and pathological picture, I am doubtful whether any other forms of severe colitis exist. Occasionally symptoms of ulcerative colitis are found to be associated with a very red and swollen mucous membrane which is not actually ulcerated; I believe, however, that this generally represents an early stage of the same disease. The acute colitis caused by various mineral poisons and the ulcerative colitis which is a rare terminal event in various toxæmic states, such as uræmia, do not come within the scope of to-night's discussion.

COMPLICATIONS.

The high recovery-rate following improved methods of treatment has resulted in the occasional development of late complications, which were formerly rare or unknown. Thus the autopsy records of the London hospitals for the 25 years ending in 1908 did not contain a single example of stricture following ulcerative colitis. I have, however, now watched this develop in four cases*; in the last two the strictures, which were multiple, were so severe that short-circuiting operations had to be performed before complete recovery could occur.

I have also on three occasions watched the development of polypi as the ulceration healed, and Dr. J. A. Ryle tells me he has had the same experience. In a case of polyposis of the colon now under observation there is a long history pointing to a similar origin, and the polypi are still accompanied by severe colitis. I expect that it will ultimately be found that most cases of polyposis of the colon originate during the healing of ulcerative colitis. As the polypi show a definite tendency to become malignant, an intermediate stage of polypus formation was the probable explanation of the development of a growth of the pelvic colon two years after complete recovery from ulcerative colitis in one of my pre-war patients and of cancer of the rectum following chronic dysentery in two others. In one of my cases innumerable small polypi had developed by the time the ulcers had healed; the stools were normal and the patient felt perfectly well. All the polypi disappeared, leaving no trace behind, as a result of treatment with deep X rays by my colleague, Dr. W. L. Watt.†

In spite of the complications I have described the majority of cases heal completely, healthy mucous membrane developing where at one time confluent ulceration was present. Much scarring is often present, but with a magnifying eye-piece the sigmoidoscope shows that this is situated in the submucous tissue, where widespread white scars may alternate with deep red patches of dilated and sometimes stellate blood-vessels; the mouths of new-formed crypts of Lieberkuhn can be seen to be evenly distributed over the whole surface of the mucous membrane. I had recently an opportunity of observing this condition four years after recovery from an exceptionally severe attack of ulcerative colitis which had lasted for three years.

TREATMENT.

The patient should be kept in bed until the sigmoidoscope has shown that complete recovery has taken place. As this may require many months and sometimes even a year or more, a greatly restricted diet, such as one of milk and milk foods, is likely to lead to anæmia and other undesirable complications, which can be avoided by a generous mixed diet, from which everything leaving any solid residue is removed, all vegetables and fruit, for instance, being passed through a fine sieve. Fresh air and exposure to the sun, and in winter to ultra-violet rays, help to improve the patient's general condition. When much blood has been lost transfusion is of great value, not only in combating the anæmia, but also, apparently, by directly increasing the patient's power of overcoming the infection.

Until recently all attempts at specific treatment had failed, as the infective organism remained unknown. In 1919 in the belief that the disease was really an aberrant form of bacillary dysentery, I tried the effect of intravenous injection of large doses of polyvalent antidysenteric serum. In the first case the result was little short of miraculous. A young

* The first two of these cases were recorded in Guy's Hospital Reports, January, 1925, by Dr. C. Ive and Dr. J. F. Venables respectively.

† This case was recorded by Mr. J. G. Kingsbury in Guy's Hospital Reports for 1926 (lxxvi., 101). The other two cases of polyposis, both of whom are now quite well, were described in Dr. Ive's paper, loc. cit.

man, who was almost moribund after being very ill for over a year, and in whom no improvement had followed an appendicectomy, recovered completely in a fortnight; five days after the first injection the sigmoidoscope showed that the innumerable ulcers seen a few days before had vanished, and nine days later the appearance of the mucous membrane was absolutely normal. In the eight years which have since elapsed he has had no recurrence; in reply to a letter of inquiry a fortnight ago he wrote that he is perfectly fit and well able to carry out his strenuous duties as an engineer on the underground railways. Since 1919 I have used antidysenteric serum in every case, often with excellent results, though occasionally with little or none. I realise that the treatment may really be non-specific and nothing more than a form of protein shock, although in one case it proved very effective after a series of injections of ordinary horse serum had failed to produce improvement. The dose of serum I now use is 40, 60, 80 and 100 c.cm., injected intravenously on successive days, and then 100 c.cm. for a few additional days. The reaction is occasionally somewhat alarming, but it is never really dangerous.

Barger and Logan have vaccinated 93 patients with the diplococcus they have isolated from the surface of the ulcers. All have been treated by other means as well, and as they reported that only 10 were "clinically, radiologically, and proctologically" cured, I do not think that there is yet sufficient evidence to say that the vaccine exerts a definite influence on the course of the disease. In the most recent report of the new vaccine treatment (April, 1926) Buie refers to 17 cases in which "the stools became normal and the weight satisfactory, but ulceration in the rectum and sigmoid persisted, as revealed by sigmoidoscopic examination." He then expresses his belief that "the chronic ulcerative colitis was cured in most of these and the ulceration was of the secondary infective type," which he does not think is influenced by the vaccine. It is, however, just this persistent ulceration which presents the chief difficulty in treatment, and it is far from clear what effect the vaccine is supposed to have if such ulcers persist after a course of inoculation. I agree with Barger and Logan as to the wisdom of removing such infective foci as teeth with apical abscesses and inflamed tonsils, though, like them, I have seen a severe local reaction follow the operation. In such cases, which I believe are rare, a secondary infection of the specific ulceration has probably taken place.

Local treatment of the colon is undoubtedly of use. Instead of albargen, which I formerly employed, but which cannot now be obtained in its original unirritating form, I generally use tannic acid (gr. i.–ii. to 1 oz.); in my experience it has been more satisfactory than other silver preparations, potassium permanganate, or acriflavine. It is most important that the fluid should be introduced through a soft catheter, which should not be passed more than an inch beyond the anus, as otherwise the rectal mucous membrane is likely to be injured. I give half an ounce of charcoal and kaolin two or three times a day in the hope that they will absorb toxins; the former certainly absorbs gas and so relieves colic, and it also deodorises the stools. There is no evidence that any so-called intestinal antiseptic exerts any action in the colon when given by mouth. During the last two years I have tried the effect of a culture of *B. acidophilus* instead of the sour milk I formerly used, but I am not convinced that either is of proved value in overcoming the infection, and in one instance a contaminated preparation led to a severe relapse.

It is of the utmost importance that the stools should not be allowed to get hard during convalescence, and for this reason a saline aperient or paraffin should be regularly taken; the former may also reduce the frequency of defæcation in the early stages and in this way may help to give the patient a less disturbed night. I am convinced, too, that every patient who has ever had ulcerative colitis should for the rest of his life keep his stools soft by means of salts or paraffin, and should avoid all food leaving any solid fragments which could irritate the muco membrane of the colon. The danger of relapse however, largely due to the fact that patients a allowed to get up and discontinue treatment wh they feel well and the stools look normal, which often many weeks before the sigmoidoscope sho that true recovery has taken place.

I have already referred to the occasional necessi for a short-circuiting operation in order to overcor the obstruction caused by the development of stricture in the process of healing. Apart from tl I believe that surgery is very rarely required. T only fatal case I have had among my 19 hospital a private patients since the war was a woman, w died of broncho-pneumonia when she was improvi as a result of an appendicostomy, performed on n advice a few weeks earlier. In three other cases appendicostomy had been performed, but witho obvious benefit; it was allowed to close when th came under my care, and the medical treatment I ha described was substituted with ultimate succes The bowel can certainly be more efficiently wash out through the appendix than from below, and t operation itself is almost devoid of danger, so th in cases which are not improving satisfactorily und medical treatment the question of operation requi consideration; if it is performed, none of the oth forms of treatment which are known to be of u should be discontinued. But the results of medic treatment in my series of cases compares very favou ably with the statistics of appendicostomy. Th in 1923 Lockhart-Mummery [12] referred to 49 cases which 9 died; if to these are added the statistics Logan from the Mayo Clinic (51), Bastedo,[13] of Ne York, and Strauss [14] of Berlin, we get 118 cases wi 29 deaths, or a mortality of 24·6 per cent., compar with a mortality of 1 out of 19 cases in my serie only 4 of which had undergone appendicectomy.‡

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‡ In one case it was found necessary to perform a coloston and excise the pelvic colon and rectum owing to persistent rect hæmorrhage; this was, however, done at the patient's hom several months after she had left hospital against my advice, I believed that further treatment would have resulted in a cur a belief which was, I think, confirmed by the pathologic examination of the exeised bowel, which showed that healin had progressed so far that nothing more than a few superfici erosions of the mucous membrane were still present.

ROYAL MEDICAL BENEVOLENT FUND.—The followin are some additional cases relieved at the last meeting:—

M.R.C.S. Eng., aged 63. After an assistantship ended 1924, tried to establish a practice in the Midlands, but has h to give it up on account of deafness. From the practice mad £47. Gifts from relatives £6. Board and lodging £68. Fun voted in 1925 £30, and this month £40 in 12 monthly instalment

Daughters, aged 62 and 54, of M.R.C.S. Eng. who died in 190 Eldest suffers from phlebitis and younger one is epilepti Total income amounts to £79 per annum. Rent and rates £3 Relieved 18 times, £393. Voted £26 in 12 monthly instalment

Daughters, aged 64 and 66, of M.R.C.S. Eng. who practise in Wales and died in 1873. They live in a two-roomed hut f which they pay £1 per annum for ground rent. One has th R.U.K.A. Annuity of £26, and they made £5 from poultry Friends gave £7. Relieved 10 times, jointly £154. Last yea voted £24 each in monthly instalments, which was renewed.

Subscriptions may be sent to the Honorary Treasure Sir Charters Symonds, K.B.E., at 11, Chandos-stree Cavendish-square, W. 1.

SOMNIFEN TREATMENT IN THE PSYCHOSES.

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THE use of "Somnifen" for the production of a state of twilight sleep in psychotic cases has had a considerable trial abroad since the first publication by Kläsi in 1922.[1] The general opinion held after three years was summed up by Müller[2] in 1925—namely, that while the induction of such a twilight sleep lasting about a week has proved of sufficient value to be accepted as a useful form of treatment, the use of somnifen for its production has dangers and disadvantages—the death-rate among cases recorded being about 5 per cent.—that this drug should be used only as one of the many available hypnotics, and that suitable combinations of these should be tried according to the requirements of the individual case.

In England the new drug was first tried at the Maudsley Hospital in September, 1924. The advantages claimed for it over the other drugs of the barbituric acid group are that it is soluble and, therefore, readily absorbed and excreted, and its solution is stable, so that it can be kept and used conveniently for intramuscular and intravenous administration. In the annual report of the medical superintendent of the hospital for 1925 mention is made of the effects produced. In view of the recent notice in THE LANCET (Sept. 25th, p. 662) of the results achieved abroad, it seems worth while to report a series of cases in which it has been used in this country.

Kläsi emphasises that it should be used strictly according to his method—namely, giving at first an injection of morphine gr. ¼ and hyoscine gr. 1/100, followed in half an hour by two ampoules each containing 2 c.cm. of somnifen solution (diethylamine diethyl dipropenyl barbituric acid). The injection must be injected deeply into the muscles if not given intravenously, as subcutaneous injection produces sloughing. After this a twilight sleep condition must be maintained by doses of one ampoule at intervals, usually of six to eight hours. The treatment is best carried out in a darkened quiet room; fluid diet, attention to excretion, and careful watching of the pulse are needed, and the patient can be roused for attention and will doze off again. If he is allowed to become fully awake the treatment must be restarted. Contraindications are heart or kidney disease or extreme emaciation. The treatment must be stopped if vomiting or cardiac failure occur, and during menstruation.

The cases treated may be divided into (1) those given the full course according to Kläsi's plan, being kept in a twilight sleep state for five days or more; (2) those started in this way and stopped for some reason; (3) those given in a different way.

1. The first group contains seven female and six male cases.

Females.—1. Mrs. A., aged 30; post-puerperal confusion with hallucinations, five months duration. Morphine and hyoscine (M. and H.) followed by two ampoules somnifen, and ten subsequent doses of one ampoule in five days, with two doses of paraldehyde in addition; only occasionally restless and slept most of the time; stopped as she became more restless and vomited. Rather quieter and more accessible for about one month, though still hallucinated; relapsed then, and no further improvement.

2. Miss B., aged 28; acute melancholia with delusions of unworthiness; agitated but not hallucinated. Had strict somnifen treatment (M. and H. followed by two ampoules) and then ten ampoules in five days; slept constantly, cyanosed hands became warm and moist, pulse became rapid and weak, so that treatment was stopped. Improved considerably for about a week, during which she was interested in occupations and mildly depressed, but relapsed badly after that, and became hallucinated for sight and hearing and acutely suicidal.

3. Miss C., aged 32. Case of ten years recurrent attacks of excitement and depression with hallucinations; was confused, incoherent, hallucinated, and restless. M. and H. followed by somnifen, two ampoules, and then 11 doses in five days; constant drowsiness; stopped because pulse became weak. Marked improvement for about a week, accessible, clear, no hallucinations, then relapsed into alternating between days of normality and days of hallucination and incoherent chatter.

4. Miss D., aged 19; acute mania; noisy and destructive. M. and H. followed by somnifen; kept drowsy and quiet for seven days with 22 doses of one ampoule; had retention of urine and cystitis. Required other sedatives for a time, then lapsed into confused depressed state and finally recovered some months later. No evident benefit from somnifen over other sedatives.

5. Miss E., aged 28; acute mania; three months noisy, destructive, and dirty; M. and H. followed by somnifen, then one ampoule b.d. with a few doses of paraldehyde; remained drowsy and quiet; total nine doses in five days; quiet and rational for two days after, then relapsed completely. Stopped because pulse became weak.

6. Mrs. F., aged 31; recent melancholia, screaming in agitation. Given digitalin (nativelle) 1/600 with each dose, as pulse poor from start; had one ampoule eight-hourly for five days, needed 1 drachm of paraldehyde in between, with this remained quiet and drowsy; treatment stopped as pulse weaker. No subsequent improvement.

7. Mrs. G., aged 27; puerperal mania. Received six ampoules of somnifen in four days in addition to three injections of ¼ gr. morphine and 1/100 gr. hyoscine. The excitement was reduced, but the periods of drowsiness were very brief. The course of the excitement was not influenced.

Males.—8. Mr. H., aged 47. Acute depression with agitation and phases of vivid hallucinosis. Treatment was begun with M. and H., followed by nine ampoules of somnifen given over a period of five and a half days. The patient remained drowsy while the drug was given, but afterwards relapsed to his former state. The treatment was repeated two months later and ten ampoules were given over a period of six days, but there was no physical or mental improvement beyond a gain of a pound in weight.

9. Mr. I., aged 43. Manic phase of manic depressive psychosis. After M. and H. he received seven ampoules in seven days, together with several doses of paraldehyde. The excitement was controlled and drowsiness maintained, but there was no lasting benefit.

10. Mr. J., aged 41. Mania. Received seven ampoules in six days as well as bromides, and was quiet and drowsy during this period, but relapsed afterwards.

11. Mr. K., aged 60. Tabes with agitated depression. Received six ampoules in five days when the treatment was discontinued owing to signs of cardiovascular failure.

12. Mr. L., aged 55. Agitated depression with arteriosclerosis. Received five injections in four days, together with several doses of paraldehyde. He became collapsed, but the signs of cardiovascular failure passed off when the drug was discontinued. The course of the depression was not influenced.

13. Mr. M., aged 23. Acute excitement, probably schizophrenic. Emotionally exalted with hallucinations and rather fantastic delusions. He received six ampoules in five days and seemed to be better for some days afterwards, but then relapsed to his former state.

2. In four cases treatment by somnifen was stopped prematurely.

1. Mrs. O., aged 35. Anxiety state passed into agitated depression with hallucinations; restless, impulsive, confused. M. and H. and somnifen started, six doses given in three days; no twilight sleep could be maintained and pulse got very weak and rapid, so that treatment was stopped.

2. Miss P., aged 50. Agitated melancholia with fears of torture, &c. Given M. and H. and 2 ampoules somnifen, slept well all night but awoke next day with persecutory delusions about the injection and very agitated and resistive; treatment was not continued as she had been getting more agitated for some time and no benefit appeared from the somnifen sleep.

3. Mrs. Q., aged 28. Acute confusion with hallucinations; agitation and restlessness following childbirth—possibly encephalitis lethargica. Somnifen one ampoule was given, but her pulse became bad and no further doses were given.

4. Mrs. R., aged 27. Acute mania of some months duration. Given one ampoule somnifen twice and slept well on it, but her pulse became weak and colour bad, so it was discontinued.

3. One other case—a long-standing hypochondriacal woman of 27 with vague ideas of suspicion and intractable sleeplessness which resisted all drugs, was given M. and H. followed by somnifen every night for four nights; on two she slept well, another night she needed paraldehyde in addition, and then she

was kept awake by a sore arm from some necrosis around the site of injection of somnifen, so that treatment was stopped. Here there seemed only slightly better sedative effect than with other drugs, and her sleeplessness and general mental condition was unaffected.

Conclusion.

Summarising these results, one may say that in most cases where the treatment can be continued a twilight sleep state can be maintained; that any improvement following this treatment is quite transitory, there being no change at all in some cases; that there are considerable risks attached to the use of somnifen, as in many instances the pulse becomes progressively weak, rapid, and often irregular: and that while in our series there have been no deaths—this is largely owing to careful watching of the heart's action and stopping treatment in good time. Only one case had retention of urine and cystitis. The improved contact with the environment claimed by Kläsi was not conspicuous, a few cases showing it for a few days only and then relapsing. Generally speaking, one may say that somnifen, as a soluble sedative which can be given intramuscularly, has its place in the list of available sedatives for psychotic patients, but has considerable risks and no special advantages. If a twilight sleep of some days duration is of benefit in some cases, this has not been evident in our series, and the advice of Müller may well be taken, to produce it where desirable by means of combinations of hypnotics rather than by somnifen.

We wish to thank the medical superintendent of the Maudsley Hospital, Dr. Edward Mapother, for his permission to publish these cases.

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A CASE OF LYMPHATIC LEUKÆMIA OF UNUSUAL TYPE.

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WE have provisionally classed this case as lymphoid leukæmia. It presents certain remarkable features, and is recorded in view of the interest that is now being taken in the pathology of blood diseases and the difficulty of classification of border-line cases.

Male, aged 16, admitted to Sheffield Royal Hospital on March 11th, 1925, and died on Sept. 30th, 1925.

He was working as a hammer driver in October, 1924, when he wounded the middle finger of his right hand. It became septic later and was "lanced." Three weeks afterwards a lump appeared above the right elbow and another in the right armpit. They were at first painful, but the tenderness gradually disappeared, though the lumps remained up to death. In the latter half of November lumps were noticed behind both ears, and a little later in other parts of the neck and under the chin. In December the eyes became bloodshot and shortly after this he had to cease work on account of weakness. About February his face became puffy and discoloured and dark patches began to appear on the skin wherever it was rubbed. At this time also some lumps were noticed over the shoulders. The appetite was becoming more and more impaired, he vomited sometimes, and he had particular difficulty in swallowing hard solids. The bowels were opened regularly, and occasionally the stools were noticed to be very black.

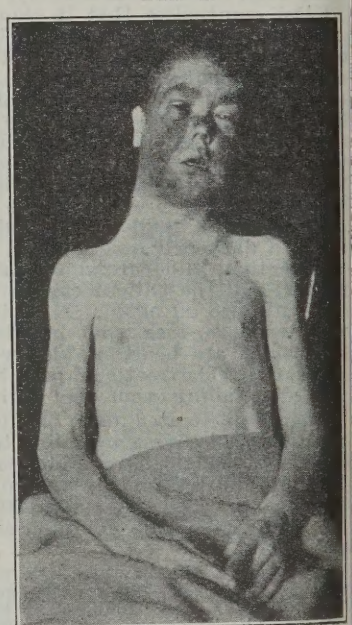
Previous History.—Scarlet fever at 5, followed by glandular swelling in the neck and operation. Influenza at 8; in bed two months. Has always bled freely when cut.

Condition on Admission.—The whole face was puffy and swollen; very marked purplish discoloration of the cheeks, eyebrows, and chin. Eyelids swollen so as to produce a condition of half closure; large subconjunctival hæmorrhages on both sides. The skin of upper part of chest shows numerous purple lines, suggesting subcutaneous hæmorrhage caused through scratching himself. Deep purple discoloration around both nipples. Ears: Old-standing otitis media suppuration with loss of both tympanic membranes. Larynx: General infiltration, swelling, superficial ulceration, and ecchymosis of the epiglottis. Hard and soft palate, including the alveolar portion, swollen and infiltrated with areas of ecchymosis. Lymphatic glands: In the neck there was widespread moderate enlargement of glands in both anterior and posterior triangles; there was a chain of rather smaller glands running the anterior border of each trapezius muscle. Numerous glands in both axillæ and groins showed enlargement. The right supratrochlear considerably enlarged and somewhat tender, left only slightly enlarged. Some comparative dullness for two inches to the right of sternum in first and second interspaces. No glandular enlargement detected in the abdomen. Besides the enlarged glands there were some other subcutaneous lumps, evidently not in the position of normal lymph glands. The largest are four about the size of a bean, one above and one to the outer side of each scapula. Heart: No apparent enlargement. A faint systolic bruit heard along left border of sternum. Lungs and pleuræ: At left base there was a small area of comparative dullness with diminished breath sounds and voice sounds. Abdomen: Liver somewhat enlarged; margin reached about one finger's-breadth below ninth costal cartilage. Spleen just palpable; its area of dullness considerably enlarged. No evidence of ascites detected.

Ophthalmoscopic examination: Both retinæ appear to be a brighter red than normal; edges of both discs blurred, especially that of left eye. No hæmorrhages detected. Wassermann reaction and blood culture give negative results.

Blood count: Red blood cells, 4,260,000; hæmoglobin, 78 per cent.; colour-index, 0·91; white cells, 10,10[illegible]. Differential count (per cent.): polymorph. neutrophils, 4; polymorph. eosinophils, 1·5; small mononuclears, 40; large, 49; cells transitional between the two last, 5·5. The small mononuclear cells were comparable in size to the small lymphocytes found in normal blood. The cytoplasm was, if anything, a little more in proportion to the nucleus, but in other respects such as appearance and staining properties they were indistinguishable from a normal small lymphocyte. The large mononuclear cells, on the other hand, showed certain differences from the usual large lymphocyte. In the first place they were sharply marked off in size, being of at least twice the circumference of the small mononuclears. (Cells of intermediate size were always counted separately and were found to be comparatively few; in most counts being not more than 1 per cent. of the whole, and never reaching above 5·5 per cent.) The nucleus of these large cells, although staining rather less deeply than that of the small cells, was not comparable in pallor to that of the large cells described by Sternberg as characteristic of leukosarcoma; neither was it vacuolated or honeycombed as in his description and no mitotic figures were seen. The cytoplasm was abundant, clear, and free from granules; it surrounded the nucleus on all sides, the radius of the cytoplasm being about equal to half that of the nucleus, which is placed nearly centrally. None of the mononuclear cells gave a positive oxidase reaction. The erythrocytes appeared normal in size, shape, and staining properties. No nucleated red cells seen.

FIG. 1.



Progress of the Case.—For the first week after admission the temperature was not raised, but subsequently it was always raised for some part of every successive week; at first only slightly and at irregular periods, but gradually tending to become higher without showing any definite type.

Throughout the whole period of his stay in hospital he seemed weak, drowsy, and disinclined to talk or move about. He would remain all day in bed without speaking a single word if left to himself, but he showed no lack of intelligence when questioned. All the time he was becoming progressively more weak and drowsy, though there were slight remissions. The discoloration of the face remained about the same for a month and then got much deeper, so that about the middle of the summer his face was nearly black. It then became gradually lighter and towards the end it was much less discoloured even than on admission. The general swelling of the face also diminished, but to a less extent, towards the end. The photograph (Fig. 1) was taken not long after admission and, therefore, does not show the intense discolouration which was reached about the middle of his stay. The tendency to ecchymosis on scratching the chest disappeared shortly after admission and never recurred. On the other hand, a mottled purple discoloration appeared on both shins on the rare occasions when he had his legs hanging down, and now and then the same rash appeared on his arms. The glands, after remaining about the same size for a couple of months, slowly began to get smaller, and at the time of his death there was not a quarter of the amount of glandular swelling that there had been on admission. The skin after a couple of months became tender to pressure and scratching the sole of the foot was particularly complained of. Tapping over the bones also produced much pain. By May hæmorrhages had appeared in both retinæ, and from that time onwards they were always detected when looked for. On April 23rd a gland was excised for the purpose of examination. It appeared to the naked eye of a mottled purple colour on section. Microscopically it was found that the ordinary lymph nodes had disappeared and the whole structure was infiltrated by cells which resembled large lymphocytes. These cells were not confined to the gland, but tended to infiltrate the surrounding tissues, including some muscle that was adherent. The liver and spleen became considerably bigger towards the middle of the summer, each reaching down to about the level of the umbilicus. They appeared to shrink a little in size during the last few weeks of life. Signs of considerable pleural and peritoneal effusion appeared towards the end.

Numerous blood counts were made. By April 20th the total number of leucocytes had sunk to 8600, and from this date up to the first week of September the total and differential count remained remarkably constant (the extreme figures being 8600 and 8000) with the lymphocytes almost precisely at 95 per cent. and the relative proportions of small and large not varying greatly from that of the first count. The erythrocytes fell gradually during the first two months to between two and three million and then remained at this level till September. The hæmoglobin followed the red cell count pretty closely. Nucleated red cells were never seen till September, and there was no alteration in size, shape, or staining properties. From the first week of September there was a rapid fall in both erythrocytes and leucocytes. The count on Sept. 25th was: R.B.C., 850,000; W.B.C., 2900; polymorphs, 25 per cent.; small monos., 13 per cent.; large monos., 62 per cent. The fall in the total number of leucocytes had thus taken place mainly at the expense of the small lymphocytes. Normoblasts were now present.

Post-mortem examination Oct. 2nd, 1925.

External Appearances.—Some wasting. Several small soft glands palpable in both posterior triangles of neck and in right groin. Also some deposits felt below the skin in several places—e.g., left forearm and back of neck; these are small white raised nodules, hard to the touch and not ulcerated. No apparent increase in lymphoid tissue at root of tongue.

Chest.—In the anterior mediastinum and along course of great vessels of neck there are many enlarged glands. None are very large, the maximum being $1\frac{1}{4} \times \frac{3}{4} \times \frac{3}{4}$ in. They are very soft, fairly discrete, and deep red on section. In a few of the glands are small white masses about $\frac{1}{8}$ in. across; these are very hard but not gritty, and readily separated from the surrounding gland tissue. It appeared as if the glandular mass was considerably smaller than it had been and was now replaced by œdematous fibrous tissue. Within the glands this change suggestive of shrinkage could be made out; there seemed to be a replacement of the soft hæmorrhagic tissue by dense white connective tissue, affecting first the periphery and spreading centripetally.

Pleura: Small hæmorrhages below the visceral pleura. Lungs: Œdema at both bases. Early broncho-pneumonia with patchy consolidation at the right base. Heart: Marked fatty degeneration of the muscle (tabby cat striation). Pericardium: Sero-fibrinous pericarditis with much blood-stained fluid. Abdomen: Peritoneal cavity contained about two pints of blood-stained fluid. Liver: Weight 70 oz., marked fatty degeneration. A few scattered nodules, dense white in colour, hard to the touch, and about $\frac{1}{8}$ in. in diameter; those on the surface being raised above the surrounding tissue. These nodules were sparsely scattered at intervals of four or more inches. Spleen: Weight 28 oz., deep red and soft. Contains scattered nodules similar to those seen in the liver. Capsule much thickened in parts. Kidneys: Together weigh 12 oz., very pale, especially the pyramids, which on this account stand out conspicuously from the cortex. Capsule strips readily and is not thickened. There are some hæmorrhages beneath the epithelium of the pelvis. Suprarenals: Some general œdema involving also the surrounding tissues. Glands: Many enlarged in the mesentery, along the lesser curvature of the stomach, and in the lumbar region. Bone marrow: Right femur four inches from tip of external condyle. Intensely red in colour. No apparent enlargement of medullary cavity.

Microscopical Examination.

Liver: Sections show aggregations of round cells in connective tissue surrounding portal spaces. These cells are large and mononuclear, and in every way resemble the large mononuclear cells of the blood, except that mitotic figures seem fairly common. A few of these cells are also seen in the sinusoids between columns of liver cells. The aggregations around the portal spaces in some places attain to such a size as to be visible to the naked eye, and in these larger masses there is a tendency to central necrosis. Repeated examinations for bacteria have given negative results. The liver cells show some fatty degeneration (Fig. 2).

FIG. 2.

Section of liver: showing invasion with large mononuclear cells which, in the lower right-hand corner, have become necrotic.

Spleen: The pulp shows evidence of congestion and there is well-marked perisplenitis of a chronic type. Malpighian corpuscles cannot be differentiated. Here and there are seen aggregations of large mononuclear cells comparable to those found in the liver and showing the same tendency to central necrosis where the mass is above a certain size. An occasional large mononuclear is seen in the sinusoids. No organisms found. Lymph glands: Replacement of the glandular tissue by aggregations of the same type of large mononuclear cell, but showing less tendency to central necrosis than in liver and spleen.

Discussion.

The most striking features of this case are: (1) The complete absence of any even temporary leucocytosis. (2) The very low total number of polymorphs. (3) The stability of the leucocyte count over a long period. (4) The character of the large mononuclear cells. (5) The fact that the glandular enlargement began in the right arm shortly after a septic wound of this extremity. (6) The subcutaneous deposits of mononuclear cells and the invasion of muscular tissue in the neighbourhood of glands. (7) The tendency to subcutaneous and submucous hæmorrhage and œdema.

In some respects this case corresponds to those described by Sternberg as leucosarcoma, but (*a*) in his cases the total leucocyte count was particularly high (up to 800,000); (*b*) the type of large mononuclear which he describes has a pale, vacuolated, and honeycombed nucleus with comparatively little cytoplasm, and mitosis is common in the blood; and (*c*) he particularly mentions that subcutaneous hæmorrhage or affection of the skin is very uncommon.

There seems to be here a possible connecting link between germ invasion, leukæmia, and neoplasm, which, in view of Gye's recent work, is not without significance.

THE RATIONALE AND TECHNIQUE OF COMBINING OPERATION WITH RADIUM TREATMENT IN CANCER.

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IT is well recognised that radiation of a cancer increases the difficulties and risks of subsequent operation when undertaken some weeks later to remove the malignant growth. For instance, unexpected deaths have occurred after the removal of a cancerous cervix which has previously been radiated. The difficulty of operation is greatly increased by the amount of fibrous tissue encountered and by hæmorrhage which is not easy to control. These conditions are Nature's efforts to effect a cure, and surgical interference with them appear to be resented by the organism. Furthermore, efficient radiation induces a severe and prolonged state of shock and malaise in all patients, and especially in those whose vitality has already been lowered by disease, partly due to the absorption of products of cell destruction. When the shock of a severe operation is superadded the strain may prove too great for the patient's recuperative powers, and if death does not supervene at once the patient lingers on, fighting a losing battle against metastases, sepsis, and the effect of radiation, possibly lighted up by surgical interference, till the end comes.

Surgeons have from time to time advocated removal of fungating cancerous masses, as a palliative measure, when radical operation is out of the question on account of the extent of the disease. This procedure is justified when it adds to the comfort of the patient, but is an acknowledgment, if not of defeat, at least of abandoned hope of cure. A number of these patients are now treated with radium or X ray alone with fairly satisfactory results. Healing in these circumstances is necessarily very tedious, and much disabling scar tissue is formed in the process, because the patient has not only to cope with masses of malignant cells destroyed by radiation, but also to overcome the chronic septic condition.

The golden rule for successful treatment should be to put as little strain on the patient's recuperative power as possible, consistent with restoration to health. As far as the individual is concerned, not till a growth, or part of a growth, is removed is it finished with. This ablation is all to the patient's advantage and justifies a radical Halstead's operation for cancer of the breast, even though it be followed by great shock. Subsequent radiation as a prophylactic measure is also justified, though it, too, causes shock. The problem is different in inoperable cancer—i.e., one which cannot be removed completely and cured by operation alone, more particularly where it is only possible to get rid of part of the growth by cutting through malignant tissue, the remains of which are left in situ and can spread the disease. The following was such a case.

The patient, a woman aged 41, was admitted to Dr. Steevens' Hospital from the country with a fungating mass the size of a fist, situated in the right breast in a line with the anterior axillary fold. The tumour, an encephaloid carcinoma, bled when touched, was firmly adherent to the chest wall, and broken down in the centre, to a septic foul-smelling crater. There were some glands below and in the axilla; but none could be felt above the clavicle. The patient first noticed the lump in December, 1924. It broke down in June, 1925. The case was inoperable, in the sense that it would have been necessary to remove part of the chest wall in order to avoid disseminating the disease by cutting through malignant tissue and leaving a cancerous and septic area behind.

I was guided in my treatment of this patient by my experience in combined radium and operative treatment of what might be called redundant malignant tissue. Administering to a cancer an efficient radium treatment and operating some weeks later do not appeal to me for the reasons already cited. Radiation by inserting needles or tubes in the parts of dissemination immediately after radical operation is a rational procedure, but increases shock, though probably not to such an extent as when there is much malignant tissue to be acted on. But if a patient is radiated immediately after a partial removal of a growth by operation some of the malignant cells disturbed may escape into the circulation before they are efficiently treated. Also, one is certain to meet with a great deal of hæmorrhage which is not easy to stop, and this naturally increases the shock. I have treated, mainly with beta rays of radium, a number of very vascular fungating malignant growths, mostly on the skin, some projecting from mucous membranes as in the rectum, and in two or three days, or as soon as the treatment is finished, curetted away the redundant tissue till I reached the more or less healthy base. The procedure is surprisingly bloodless, as I give a greatly excessive dose to the malignant tissues which I intend to remove, so that the mass has become practically necrotic and inert when it is surgically dealt with. The redundant tissue, which is useful as a pin-cushion to hold radium needles, acts as a filter to cut off the beta rays from the base of the growth, so that the parts that remain after operation receive gamma ray treatment alone of such intensity as will destroy the malignant cells, but at the same time will not destroy the normal cells and connective tissue, which I depend upon to effect repair in the raw area that is left.

The advantage of this method of treatment over diathermy in the removal of such growths is that the latter produces a necrosis of everything for a certain depth, but beyond that depth has little influence on malignant cells. If the tumour described above were treated in this way necrosis of the ribs might follow, which would be a very undesirable after-effect. As this radium treatment is a local one, and as the greater part of the mass which is treated is removed immediately afterwards, its radiation cannot seriously effect the amount of shock from which the patient may subsequently suffer. As a matter of fact very little shock results from this procedure. When, however, the condition to be treated is such that it requires more than simple removal of a malignant mass, it is necessary to take into account other tissues which have to be disturbed in order to obtain the results required. In the above breast case I wished to deal efficiently with the base of the mass I was about to excise, and also to cover up the raw area left by a plastic operation. I was careful, therefore, not to radiate excessively before the operation the skin I intended to use for this purpose, nor did I think it advisable to treat areas which were suspicious and the paths of the dissemination of the disease before I performed the operation. In fact, I did not wish to run any risks from the constitutional disturbance which would be produced before operation by a prolonged treatment by radium of the glands in the axilla, or in any extension there might be above and below the clavicle, so as to minimise the amount of shock that would be present during any one period of the treatment, especially that following operation.

The actual procedure in this breast cancer was as follows.

At 1 P.M., on Oct. 24th, 1925, without an anæsthetic, I inserted 16 tubes, containing 91·4 mc. of radon divided evenly among them, into the cavity of the growth, and pushed them into the surrounding fungating mass. This caused a certain amount of hæmorrhage, but otherwise did not inconvenience the patient; a 2 mm. thickness of gauze had first been placed at the bottom of the cavity against the chest wall to prevent over exposure in the area which required a lethal cancer dose, but not an overdose. The overdose in the remaining part was immaterial, as I intended to remove it. At the same time two brass boxes containing radon capillaries were applied to the surface over the glands below the axilla as I intended to remove these glands with the superimposed skin. On Oct. 26th, 46 hours later, the fungating mass, still containing the radium tubes, the glands that had been radiated with the skin over them, and some glands further up the axilla and half the breast, including and beyond all the indurated portion were removed

without encroaching on any septic skin. The whole of the breast was not removed, as I expected that the skin brought together over the originally diseased area might not unite owing to the septic condition of the part, and the intensity of the radiation it had received, and I intended to use the remaining skin of the breast to cover this area at a later date. The 16 tubes, after being cleansed and sterilised and arranged in bandolier fashion, were pushed up into the axilla, being separated from the axillary vessels by 1 cm. of gauze and from the anterior axillary fold by three or four thicknesses of gauze, and left there for 24 hours. The skin incision was closed over the breast area, but a small gap remained just at the axilla where two or three stitches were not tied till the tubes had been removed from the axilla. I considered it important to treat the axilla, which had not been previously radiated, immediately it had been incised, so as to minimise the risk of dissemination from this area.

Although the patient stood the operation extremely well and did not appear to suffer from much shock I considered it wiser not to continue the radium treatment at once. On Nov. 6th the chest below the clavicle comprising an area of 14 by 2 cm. was treated by surface application for 42 hours, and the applicator was applied above the clavicle for 60 hours. On Nov. 23rd the area at the top of the incision where the skin had not been quite brought together was treated for 34 hours; a similar dose was given along and in front of the healed incision, and including the part of the breast that was not removed for 37 hours. Three days later the side of the chest behind the incision was radiated. The total amount of energy from radium used up in this case was:—

	Mcd.
Before Operation.	
16 tubes, 3 cm. long, 5 mm. external diameter, wall 1·75 mm. brass. Inserted into fungating mass. Area 6 by 5 cm.	26·7
Surface treatment glands, area 7 by 2 cm., distance 3 mm. brass screen	5·3
Treatment 46 hours, Oct. 24th to 26th, 1925.	
At Operation.	
16 tubes as above, area 8 by 2 cm., inserted into operation wound axilla	10·5
Treatment 24 hours, Oct. 26th to 27th, 1925.	
After Operation.	
Surface treatment at 18 mm. screen and distance piece of felt +2 mm. brass—	
Below clavicle area 14 by 2 cm., 42 hours, Nov. 6th to 8th, 1925	28·1
Above clavicle area 14 by 2 cm., 60 hours, Nov. 8th to 11th, 1925	26·9
Over upper part of incision, area 9 by 9 cm., 34 hours, Nov. 23rd to 25th, 1925	22·6
Over lower part of incision and breast in front of it, area 9 by 9 cm., 37 hours, Nov. 24th to 26th, 1925	22·5
Anterior axillary fold, area 10 by 2 cm., 28 hours, Dec. 9th to 10th, 1925	18·7
Surface beta ray treatment, area 2 by 3 cm. Thin rubber glove filter, distance 3 mm., over unhealed area to stimulate formation of epithelium, 36 hours, Nov. 16th to 17th, 1925	0·3
Total	182·9
Equivalent to 24,400 millicurie-hours or milligramme-hours.	

The above dose is calculated and measured by the destruction or loss of radium emanation (mcd.) during treatment. Radium emanation obtained from the Royal Dublin Society Radium Institute in glass radon capillaries and 53·93 mg. of radium element in six capillary metal cells have been used together indiscriminately. The loss of activity of radon is obtained from a table.[1] The loss from the element is taken as ¾ per cent. in mc. of the mg. of element present. 3 mcd. is equal to 400 mg., or mc. hours.

The patient was in Dr. Steevens' Hospital from Oct. 17th to Dec. 15th (62 days). When she left there was no sign of inflammation or thickening, and most of the operation scar had healed by first intention. A small area below the axilla and above the original site of the fungating mass, which had not been covered with skin at the operation still required dressing. She wrote twice since, on the last occasion at the end of February, stating she was quite well and able to do her house work. One of the most satisfactory results of the treatment is that the whole skin incision, which could be brought together at the operation, healed up at once without the least signs of recurrence or sepsis, in spite of the original septic condition of the breast, the malignant nature of the tumour, and the fact that the operation was incomplete, for the specimen revealed a gap at the bottom of the crater where the cancer had involved the chest wall. I advised this patient to return for a further prophylactic treatment in about two months, but she has not done so.

[1] Walter C. Stevenson: A Convenient Radium Emanation Table for Clinical Work, Archives of Radiology and Electrotherapy, March, 1916; Medical Press and Circular, April 19th, 1916.

It will be noticed that the radium treatment of the above patient was extended over a considerable period to avoid unduly taxing her strength at any one time. The operative interference was also limited to the removal of palpable growth or metastases. The procedure was dictated by the experience of a similar case a year before.

The patient on that occasion was 62 years old, had a growth for six years in the upper part of her right breast, with glands in the axilla and above the clavicle, and chest trouble. The growth had ulcerated through the skin in two places, where there was sepsis and an offensive odour, but there was no fungating mass. On April 29th, 1924, I inserted 12 steel needles 12 cm. long containing 10 cm. of radon each, in glass capillaries 2 cm. long, through the tumours and under the adjacent skin of the breast. These needles were in for 60 hours, but each needle was withdrawn 2 cm. at intervals, so that each intensely radiated six areas, or 72 in all. At the same time three tubes with walls of 1 mm. thickness of brass with extension wires screwed into one end of each tube were similarly inserted into the axilla for 60 hours, each tube being withdrawn into three different positions. The ulcerated area was treated by surface application on May 4th and 5th, 1924. On the last date, when a total dose of 90·6 mcd. had been given, I removed the breast and axillary glands, and succeeded in covering the raw area with skin. The patient was very prostrate for about a fortnight after the combined treatment. About the end of this period a great deal of pus formed under the skin, small areas of which sloughed. Undoubtedly, in her debilitated condition from cancer, sepsis, and pain, her skin, particularly where unprotected by masses of malignant tissue, was unable to stand the beta ray treatment which had been administered. Though the pus formation practically ceased and the ulcers were healing, she gradually lost ground and died with increased chest symptoms three months after treatment.

This patient was a hopeless case from the beginning on account of metastases in the thorax, but would have probably benefited more by a less drastic radium treatment with gamma rays alone, administered at intervals, and a more limited operation. One is handicapped in such a case by the fact that the prolonged treatment is not always possible for a country patient in a general hospital.

Conclusions.

Experience appears to show that when operation and radiation are combined in the treatment of cancer: 1. There is no advantage in giving a lethal cancer dose of radiation first and delaying operation more than a week, as further delay increases the difficulty of the operation and the shock. 2. Over-radiation of a cancerous mass which cannot be completely removed, followed immediately by its partial removal, lessens the shock, and the operative difficulties. 3. At the operation it is an advantage to bury radium tubes and needles in the incised area and in the paths of dissemination. 4. It is an advantage to radiate the whole operation and suspicious area about three weeks after operation when the incisions have soundly healed. 5. The patient's general condition is the best guide to the extent of the operation and the intervals of time at which different areas are to be efficiently radiated.

WIGAN INFIRMARY.—New X ray and sunlight departments were opened at Wigan Infirmary by Dr. Robert Knox, director of the electrical department of the London Cancer Hospital, on Nov. 16th. In the absence of the President of the institution, the Earl of Crawford, Mr. William Johnson, J.P., Chairman of the board of management, presided. Dr. Knox said that to get the best possible value from X ray examination it was essential that the radiographic outfit should be one of the highest standard. That was provided in the splendid equipment of the radiographic room. For the examination of injuries immediately after, and for observation, at a later date, of the progress of the condition and for the guidance of the orthopædic surgeons, the highest standard of radiographic work was demanded. Expert skill in interpretation was also essential, and the after-treatment of cases of injuries of bones and joints had been provided for in the light and massage department. Nothing in the scheme of the new department seemed to have been overlooked. Prior to the opening ceremony Dr. Knox was entertained to luncheon by the honorary medical staff of the infirmary, when Dr. E. H. Monks, J.P., honorary consulting surgeon to the institution, was in the chair.

TREATMENT OF DIABETES IN CANADA AND THE UNITED STATES.

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A REVIEW of present theory and practice in the treatment of diabetes in Northern America may not be without value in showing fresh aspects of this interesting disease. No single scheme of treatment has been adopted as a standard, and the different methods employed illustrate differences of opinion as to the real nature of the disease. The most striking thing in diabetes is undoubtedly the loss of the power to deal with glucose. The main point at issue is whether insulin is required only for the metabolism of glucose, or whether it is required for the metabolism of fatty acid also, and possibly for other processes in the organism; and the essential conflict of opinion is over the relative importance attached to restriction of the glucose metabolism alone or to restriction of the total metabolism—total food intake and body-weight.

A brief discussion will be given of recent work, which shows that by scientific planning of the diet we can safely reduce the glucose metabolism far below the level attained by simple carbohydrate deprivation. For any given number of food calories required we can calculate the minimum amount of glucose that can be given without the formation of harmful waste products from incomplete combustion of the fat, and this is, in fact, the method by which the diet is usually planned in America. Within the limits set by the total calories and the necessity for a minimum quota of glucose, we can in addition devise diets of varying glucose content while maintaining the same calorific value. It is, therefore, possible to test the rival theories by noting the amount of insulin required to keep a stable diabetic patient sugar-free on diets designed to isolate such factors as variation in the total calories with constant glucose content, or variation in the glucose content with constant calories. It will be seen that the results obtained contradict the belief that diabetes is a disease of glucose metabolism alone.

I have been associated with Dr. F. M. Allen, and it is natural that a bias in his favour should appear. Allen's methods have undergone modification, but the principle of restriction of the total calories remains fundamental. The advent of insulin removed the necessity for the extreme degrees of undernutrition which were considered advisable in severe diabetes and which may often have actually reduced the tolerance. Starvation and emaciation are no longer practised, and Allen now stands in a middle position between rather widely divergent schools of treatment. It must be emphasised that whatever the differences in dietary regulation a normal blood-sugar and a sugar-free urine are regarded by all as essential end-results of treatment. Very little reference is made to insulin in this paper; it is assumed that insulin is given in the necessary dosage whenever these end-results cannot be obtained by an adequate diet alone. It will be convenient to discuss first the total food allowance and secondly the composition of the diet.

Total Food Allowance.

Woodyatt [1] believes that the endocrine function of the pancreas has to do with the utilisation of glucose and nothing else. Allen [2] states that the most important factor governing the insulin requirement, with any ordinary plan of diet, is not the carbohydrate content but the total caloric content. In the Woodyatt scheme the total calories of the diet are determined by the quantity of glucose the patient can assimilate. The quantity of glucose a patient can assimilate is a highly speculative factor. It is affected by the state of nutrition and treatment and, except in total diabetes, by the amount of glucose administered. Glucose may be derived from all three elements in the diet. Carbohydrate produces roughly its own weight of glucose; protein produces 58 per cent. of its weight glucose and the equivalent of 46 per cent. of its weight of fatty acid; fat produces 10 per cent. of its weight glucose from its glycerol fraction and 90 per cent. fatty acid. Fat has the highest calorific power, but the need of carbohydrate for its complete combustion sets an upper limit to the amount that can be given; protein is an indispensable food. Within these limits it is possible to devise any number of diets with the same glucose content but very different caloric values. If diabetes were a disorder of glucose metabolism alone, we should naturally plan a diet containing the maximum number of calories compatible with the glucose tolerance. It is easy to test Woodyatt's hypothesis by giving a stable diabetic patient diets of the same glucose content but different caloric values and observing the insulin requirement. It is, however, the actual food metabolised with which we are concerned and not the food eaten.

Let us suppose that a patient has a glucose tolerance of 100 g. and a weight of 60 kilos. If a gramme of protein is given per kilo of body-weight, the largest diet possible will contain 52 g. carbohydrate, 60 g. protein, 134 g. fat, 1622 calories. The same amount of glucose would be contained in 66 g. carbohydrate, 60 g. protein, 504 calories, but on this allowance the patient would burn not only some of his own fat, which would affect the experiment very little, but some body protein in addition. This would yield extra sugar and the deductions would be false.

Experiments have been made by Allen [3] in which this fallacy is guarded against, and it has been definitely shown that on isoglucogenetic diets the insulin requirement is directly proportional to the total calories. Increase in calories causes increase in body-weight, and this is probably the essential cause of the increased insulin requirement. It is illustrated in the following case:—

—	P., g.	F., g.	C., g.	Calories.	Insulin daily.	Weight in pounds.
March 18th–31st	60	262	100	3000	40	113
April 1st–3rd ..	60	362	90	3860	40	114
Same diet till—						
June 1st–2nd ..	60	362	90	3860	80	133

Restriction of the total calories has, therefore, been generally adopted. The privations of the war caused physiologists to devote more study to undernutrition, and the subject has been recently reviewed by Lusk.[4] If undernutrition is not carried to the prelethal stage its most striking result is a decrease in the basal metabolism. This is well exemplified in the torpor of anorexia nervosa. It is out of proportion to the loss of body-weight and seems to be a protective response of the body to starvation.

During Levanzin's fast the basal metabolism fell from 1432 at the start to 1002 on the twenty-first day. His metabolism thus produced 30 per cent. less heat than at the start, though he had lost only 16·7 per cent. of his body-weight. A group of athletic young men were taking 3200 to 3600 net calories a day. They were then placed on a diet of 1400 calories for three weeks without reducing their mental or physical activities. After the average weight had fallen 12 per cent. below its original level it was found that they were able to maintain this weight on a diet of 1950 calories, a little more than half of the amount originally required. There was a falling off in strength and vigour, but on account of their lower weights they were able to walk a mile with less expenditure of energy than at the beginning of the experiment.

There is thus a simple explanation for the benefits of undernutrition in diabetes. With the loss in body-weight and the decrease in metabolism the diabetic organism is able to support life on a lower plane of nutrition. A diet sufficient to maintain this level is within the tolerance of the pancreas, and there is, moreover, a gain in tolerance when the pancreas is relieved of the strain of constant hyperglycæmia. If the tolerance is very poor, insulin is needed in

addition to maintain a level of nutrition compatible with a full life. Allen [2] argues that undernutrition has a specific effect in diabetes apart from decreased metabolism and relief from hyperglycæmia.

The Toronto school [5] believes that the patient should be kept at 10 per cent. below his normal weight. Others use a calculated value for the basal metabolism in estimating the total calories. The usual method is described by Wilder.[6] The basal metabolism is calculated from the patient's height, ideal weight, age, and sex by the Dubois standards. If the actual basal calories are allowed for a hospital patient, and an additional 20 to 30 per cent. for a patient in a sedentary occupation, it is believed that the food intake is about 20 per cent. below the normal requirement. This undernutrition should lower the metabolic rate of the patient about 15 to 20 per cent. below that of an individual of like surface area, age, and sex on an unrestricted diet, and a constant weight should be maintained.

These methods are very simple and practical but they are much too inelastic. Many patients so treated are overfed and insulin is required by patients who would be happier without it on a lower plane of nutrition. The wide variations of weight in healthy people of the same height are well known, and there is no reason to believe that the normal weight of the diabetic is more standardised. In general we estimate the weight in health too high. The New York Life Insurance Company's figures [7] show that average weights at the age of 45 have a mortality 5 per cent. above the optimum rate, which is found at 20 lb. under the average weight. The ideal weight for a diabetic patient can only be found by observation of the effects of treatment. Joslin and Allen maintain him at the least weight at which he is able to do his work and "feel good." Many youthful patients need building up; the majority of older patients need reduction. Reduction is spaced over long periods by giving diets of 600 to 1000 calories with fairly liberal protein (60–100 g.) and carbohydrates (40 to 100 g.). Allen gives thyroid quite freely in these cases and considers that there is no danger of aggravation of the diabetes if toxic manifestations are avoided. There is no loss of body nitrogen and the diets can be made satisfying. Obese patients often appear to have a severe diabetes, the blood-sugar is over 400 mg. per cent., and ketonuria may be present. When the weight has been reduced the tolerance is found to be quite high and a diet liberal in carbohydrate can be given.

The weight is the most important single factor in diabetes. A physician suffering from diabetes, when asked what diet he was taking, said, "I keep my weight at about 128 lb." The weight is kept constant at the optimum level, the calories vary somewhat with the degree of activity. In experiments where dogs were fasted and exercised, Anderson and Lusk [8] found that the basal metabolism was determined by the condition of the body and was not affected by a large influx of food on the day previous. Similarly, extra food used by the diabetic in exercise and not stored in the organism rarely causes much increase in insulin requirement. Diabetics need not give up arduous occupations on account of the disease, and the majority are benefited by exercise.

In a few cases, however, the tolerance is so poor and the transitions from hyper- to hypo-glycæmia are so sudden and alarming, that the patient can only be balanced on a low diet which is insufficient for an active life. Fortitude is needed in the handling of these cases of "total" diabetes, especially when they occur in children. They should never be given up and allowed to spill sugar in the urine. The insulin may have to be given as often as six times in the 24 hours, and temporary undernutrition may be advisable. It is usually most convenient to keep the carbohydrate low, while a high proportion of fat in the diet seems to buffer the organism against insulin shock. With care the tolerance generally improves markedly and a more natural life can be resumed.

A rather long section has been devoted to the total food intake. It is not disproportionate, because the weight and the total calories are the most important factors in the disease. Diabetes should not be treated by simple carbohydrate restriction, however simple it may seem. The weight and the total calories should be reduced, and though carbohydrate restriction is of prime importance, restriction of fat is also necessary in the obese patient on account of its great calorific power.

Diet Composition.

The so-called Shaffer ratio has very greatly influenced methods of composing diabetic diets in America. It is well known that fat is incompletely metabolised in carbohydrate starvation—"the fats are burned in the fire of the carbohydrates." On the basis of experiments in vitro and metabolism studies on patients, Shaffer [9] believes that two molecules of fatty acid can be completely burned during the oxidation of one molecule of glucose. In practice ketonuria appears when the proportion of fatty acid metabolised exceeds one molecule for every molecule of glucose on account of unequal distribution of the metabolites in the organism, but no severe ketosis develops until the proportion exceeds two molecules of fatty acid to one of glucose. We have stated above that while carbohydrate yields only glucose in the organism, protein and fat yield definite amounts of glucose and fatty acid. For a given number of calories it is therefore possible to calculate a diet containing the maximum amount of fatty acid and the minimum of glucose. From the equimolecular ratio (fatty acid molecules : glucose molecules = 1) Woodyatt [1] has devised the equation

$$F. = 2\,C. + \tfrac{1}{2}\,P.$$

—i.e., the weight of fat may equal twice the weight of carbohydrate, plus half the weight of protein. From the higher ratio (fatty acid molecules : glucose molecules = 2) Wilder [6] has devised the equation

$$F. = 4\,C. + 1{\cdot}4\,P.$$

The Woodyatt formula is more popular, for the Wilder formula gives a dangerously high proportion of fat. Insulin patients may rapidly develop acidosis as a result of infections or indiscretions, and the liability is greater when the patient is constantly on the threshold of ketosis.

The amount of protein is usually determined arbitrarily. Woodyatt gives 1 g. per kilo body-weight; Wilder, and Newburgh and Marsh [10] give $\frac{2}{3}$ g. There is a certain amount of evidence that protein is harmful in diabetes, though Allen absolutely denies this. The Sage investigators [11] and workers at the Mayo Clinic reported their highest D : N ratios during periods of high protein feeding. Wilder and co-workers found that the same dose of insulin, given to a diabetic patient at one period when the diet contained a high proportion of protein, caused much less reduction of glycosuria than it did at another when the protein was largely replaced by carbohydrate, the caloric and total glucose balance of the diet being kept the same. McCann,[12] therefore, gives the minimum amount of protein with which it is possible to keep the patient in nitrogenous equilibrium. Dr. R. R. Hannon tells me that with patients on diets of basal calories plus 10 per cent. (1800 calories) composed on the Woodyatt formula the nitrogen metabolism can be reduced to 2 to 3 g. per day; the sugar is easier to control, but the patients feel weak on so little protein. Allen has published experiments where the replacement of protein by equivalent amounts of carbohydrate has *increased* the insulin dosage, and a deleterious influence from protein is far from certain. Protein is more satisfying and it produces a greater sense of well-being than other foods, and it should not be needlessly restricted.

However the proportions of protein and carbohydrate are manipulated, the real aim in using the Shaffer ratio is to give as little glucose-forming food as possible. On Wilder's scale a man 5 ft. 10 in.

in height and 140 lb. in weight would require a diet of 2100 calories, which would be furnished as 45 P., 33 C., and 199 F. The Woodyatt ratio would allow 60 P., 72 C., and 174 F. A normal individual of the same size would take 120 P., 500 C., and 60 F. (3000 calories). The first difference from the normal is the decrease in total calories, the second is the disproportionate decrease in protein and carbohydrate and the increase in fat. It is impossible to construct pleasant diets when so many calories are derived from fat, and as the insulin dosage is governed by the total calories a very high proportion of fat is not such a desideratum. It is still necessary to reduce the carbohydrate and protein intake, just as we eliminate sugar and all concentrated carbohydrates from the diet, for these foods cause an immediate rise in the blood-sugar. But fat has an effect, less obvious and immediate, on the insulin dosage, and experience shows that diets composed on the above formulæ may finally call for as much insulin as isocaloric diets with more carbohydrate and protein. The ingestion of fat has little immediate effect on the blood-sugar, but when there is a high proportion of fat in the diet the blood-sugar may slowly rise for some months even though weight is not gained, and it is not till the end of this period of stabilisation that the real insulin requirement is known.

Joslin and Allen, therefore, give rather more liberal allowances of protein and carbohydrate than are suggested by the Shaffer ratio. "In average cases comfort, strength, and convenience are served by allowing in the neighbourhood of 100 g. carbohydrate and 100 g. protein daily, and any excessive insulin dosage is avoided by restriction of fat and total calories."[3] These diets certainly entail a higher initial insulin dosage than an isocaloric diet containing more fat, but it is rarely much higher in the long run. It may be necessary to follow patients over rather long periods to see the full effect of fat and total calories on the insulin requirement—often loosely called a loss of tolerance. These points are illustrated by data from Dr. Allen's cases which have been collected by Dr. Garfield G. Duncan.

Of 64 insulin patients followed for two years 39 showed a decreasing insulin requirement, two discontinuing its use, eight showed an increase, and 17 were unchanged since discharge. Of the eight taking more insulin, four were on high fat diets, three showed a considerable gain in weight, and the remaining patient had received a diet increase from 1000 to 2400 calories.

Case 1940 may be reported in greater detail, as the patient was employed in hospital and treated under ideal conditions; there were no intercurrent infections and the weight was kept at 108 to 110 lb. throughout. A diet of 70 g. protein, 60 g. carbohydrate, and 1600 calories, with 60 units of insulin daily, controlled the diabetes from Oct. 6th to Oct. 19th, 1924. Carbohydrate and protein were then reduced to 30–30, the total calories being unchanged. The insulin was reduced to 14 units with moderate hyperglycæmia but no glycosuria. To keep the weight constant and thus exclude any influence of weight on insulin requirement, fat was increased on Nov. 30th to bring the total calories to 1800. There was a gradual increase in the insulin till he was taking 46 units a day. On March 1st, 1925, the protein was increased 10 g. with no change in total calories, the necessary reduction being made in fat. On March 6th he had a hypoglycæmic reaction and the insulin was reduced to 42 units. Gradual increases were then made in protein and carbohydrate with no change in total calories, until on August 14th he was taking 60 P., 60 C., and 1800 calories. Insulin was further reduced to 40 units daily and he remained balanced on this régime. Thus when time was given for stabilisation on isocaloric diets, 60 P. and 60 C. actually required a little less insulin than 30–30 and higher fat.

It is clear that the insulin dosage depends on the total food intake and that fat may ultimately have almost as much influence as carbohydrate. In practice it is necessary to restrict the carbohydrate because of its immediate effect on the blood-sugar, but there is no advantage in reducing it to the lowest possible figure.

The idea of high carbohydrate diets has been pushed to an extreme by Sansum.[13] Whereas the usual diabetic diet contains 2 to 2·5 g. of fat to every gramme of carbohydrate, Sansum's diets contain adequate protein and 2 to 2·5 g. of carbohydrate to every gramme of fat. The insulin requirement is usually increased, but to a far less extent than might have been anticipated. One case is reported in full.

On a diet containing 200 g. of fat this patient gradually lost tolerance till he needed 30 units of insulin daily. When the fat in the diet was reduced to 117 g. and replaced by an isocaloric amount of carbohydrate, so that he was taking 278 g. of carbohydrate a day, the insulin requirement at once increased to 112 units. It then slowly declined, and at the end of some months he needed only 34 units per day. Intercurrent infection cannot be excluded as Sansum does not mention this possibility.

He concludes that on isocaloric diets the insulin requirement increases as the carbohydrate is raised, but not in proportion to the glucose as was formerly believed. Calorie for calorie, glucose requires more insulin than fat, but gramme for gramme it requires less. Successive diets and dosage from another patient were—

C., g.	P., g.	F., g.	Calories.	Insulin.
77	65	182	2206	68
179	82	85	1809	73

These carbohydrate-rich diets are more palatable and the patients feel stronger and are less tempted to break diet. Sansum's reported cases seem to have been mild. In the severe forms of the disease such large amounts of carbohydrate produce excessive fluctuations in the blood-sugar and are quite inadvisable.

Interesting work has been done on artificial foodstuffs. It is probable that any food, just because it is a food, must ipso facto cause a demand for insulin. Certain of these substitutes, such as glycerol, lævulose, caramel, and hexose-phosphates, are known to produce glucose in the body and need not be considered further. Rabinowitch[14] has recently experimented with dihydroxyacetone ($C_3H_6O_3$), which polymerises into glucose ($C_6H_{12}O_6$). In short experiments it causes less hyperglycæmia than an equivalent amount of glucose and seems to accelerate the metabolism of carbohydrate, but there is not evidence that it has any advantage over longer periods.

Kahn[15] in 1923 introduced an artificial fat, intarvin. It is the glycerol fat of margaric acid ($C_{16}H_{33}COOH$), and its importance is that it contains an odd number of carbon atoms. The ordinary fats we eat contain an even number of carbon atoms. In the body fats are oxidised at the β carbon atom, losing two carbon atoms at a time

$$(R.\overset{\beta}{CH_2}.\overset{\alpha}{CH_2}.\ COOH \longrightarrow R.CO.CH_2.COOH \longrightarrow R.COOH + CH_3.COOH).$$

All the common food fats thus finally descend to the four carbon atom stage of butyric acid ($CH_3.CH_2.CH_2.COOH$). In the absence of carbohydrate metabolism, as in starvation or diabetes, the oxidation of this acid stops at aceto-acetic acid ($CH_3.CO.CH_2.COOH$) and ketosis occurs. When intarvin is given no such ketosis can arise. Nevertheless, although intarvin can be completely burned in normal metabolism, it produces an acidosis in the absence of carbohydrate metabolism. The fatty acid is again oxidised two carbon atoms at a time till it comes to the three carbon stage of propionic acid ($CH_3.CH_2.COOH$). Oxidation then stops at the derivatives of this acid, which are pyruvic acid ($CH_3.CO.COOH$) and lactic acid ($CH_3.CHOH.COOH$), and these acids are excreted in the urine. Intarvin is so nauseous that it is difficult to eat it for long periods, and we are not well informed as to the degree of this failure of oxidation or the possibility of a pyruvic acid acidosis, though it is suggested that the CO_2-combining power of the blood may be diminished. It is an extremely valuable substance for studies of the intermediary metabolism and its possibilities have not yet been fully explored.

Such studies might modify present-day views of ketogenesis.

This description of intarvin is based on Lundin's [16] experiments. Keefer's [17] tables likewise show very little decline in organic acid excretion when intarvin is substituted for ordinary fat.

Conclusion.

It has been the object of this paper to reveal the point of cleavage between two widely different interpretations of the disease diabetes. For Woodyatt diabetes is a disease of glucose metabolism understood in its proper sense and only the metabolism of glucose asks for insulin. For Allen diabetes is a disease of total metabolism, and all foodstuffs, whether of the nature of glucose or fatty acid, cause a demand for insulin both in their catabolism and anabolism. This suggests that all foodstuffs pass through a final common stage where insulin is demanded. The diffusion of insulin through all the tissues, and the dependence of insulin dosage on the body-weight and the total food intake, make it appear most likely that insulin is necessary, not merely for the metabolism of glucose, but for the process of metabolism itself.

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Clinical and Laboratory Notes.

A CASE OF DOUBLE INTESTINAL OBSTRUCTION.

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A Sudanese woman, aged 50, was admitted to Makwar Civil Hospital with a history of three days' severe abdominal pain. During this period she had not vomited nor had her bowels moved. The woman was moribund; her breath smelt of acetone, and there was marked abdominal distension. The following were the findings at an autopsy two hours after admission:

Coils of distended small intestine and a very distended cæcum and ascending colon were displayed on opening the abdomen. On further examination the terminal six inches of the ileum were found to be collapsed, as complete obstruction had been produced by a tight fibrous band which passed from the posterior abdominal wall across the gut to the mesentery. Some adhesions were also present in the region of the duodeno-jejunal flexure and a traction diverticulum of the jejunum had resulted. The cause of obstruction in the large intestine was found to be an annular growth of the hepatic flexure which completely occluded the colon.

A report on this tumour, by Major T. N. Whitehead, described it as a columnar-celled carcinoma.

There appear to be three points of interest in this case: (1) The absence of vomiting, associated with a tightly contracted ileo-cæcal sphincter. (2) The lesson that blind cæcostomy would have been useless. (3) The occurrence of intestinal carcinoma in a person living a very primitive life on a diet unaffected by modern methods of food preservation or adulteration.

AN UNUSUAL CASE OF REMOVAL OF THE COLON

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THE following case seems sufficiently uncommon to justify its being recorded.

The patient, an unmarried woman of 50, was admitted to hospital in a state of profound collapse. She had been seized with agonising pain a few hours previously, quickly followed by vomiting and collapse. A hypodermic injection of morphine was given, and she was taken at once to hospital, where resuscitation measures were employed.

On examination a tumour was found extending nearly up to the umbilicus; this was thought to be a twisted ovarian cyst. The patient was very thin and gave a history of long-standing attacks of pain, constipation, and frequent vomiting.

On recovery from the severe collapse the abdomen was opened under spinal analgesia and a large black mass immediately seen. Examination of the pelvis showed a normal uterus and normal appendages. The small intestine was seen to pass into the tumour, which was tethered to the posterior abdominal wall by a stout pedicle which was tightly compressed by a band which could be readily felt. Emerging from the black mass was large intestine which proved to be the sigmoid colon.

After dividing the constriction surrounding the pedicle the state of affairs became clear. The bowel, from the last six inches of the ileum to the termination of the descending colon, possessed a very long mesentery, which had permitted strangulation of the entire segment of intestine by a band originating from the healthy colon below the strangled segment. This band probably arose from an appendix epiploica, and its ultimate attachment could not be made out.

As it was certain the injured intestine was beyond recovery there was no choice as to procedure. Accordingly the entire segment of intestine was resected, the ends closed, and the ileum implanted into the sigmoid by lateral anastomosis. The operation was easy owing to the long mesentery, which did away with the need to mobilise the colon, and to the ready access to the blood-vessels in the mesentery.

The patient's condition was critical, and had it not been for the spinal analgesia it is thought she would have succumbed. She remained in hospital eight weeks, during most of which time diarrhœa was extremely troublesome. This cleared up and convalescence was uneventful thereafter.

The operation was carried out in September of 1924. The patient is now an active and well-nourished looking woman in striking contrast to her previous condition.

TWO CASES OF SUICIDAL CUT-THROAT.

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IN cases of death from wounding, medical evidence frequently becomes of paramount importance in deciding whether the wounds were of homicidal, suicidal, or accidental nature, for it often happens that no evidence is available other than that gained from an examination of the body and the locus. In view of the responsibility placed upon the medical examiner, it is desirable to record cases in which the

injuries of the victim are of an unusual or unexpected nature, and I think it worth while to report the two following cases of suicidal cut-throat which present widely different characters.

CASE 1.—An Austrian subject, 55 years of age, was discovered lying on the floor of his room with a razor by his side. A letter was found stating his intention to take his own life because of ill-health and poverty. The deceased was right handed.

On examination the only injury found was a superficial wound one and three-quarter inches long on the right side of the neck behind the level of the sternomastoid muscle and about the position of its lower third. The wound had a clean-cut sliced appearance and was directed from above downwards and forwards. It passed through the skin and subcutaneous tissues and incised the wall of the external jugular vein forming a small slit a quarter of an inch long, just above the omohyoid muscle. There was no effusion of blood into the tissues, nor was there any other sign of violence. A few bubbles of air were found in the right auricle of the heart but nothing suggestive of the usual frothy appearance of air embolism. There was no air in the ventricle nor in the pulmonary artery. There was a considerable amount of blood in the heart and vessels, and the condition of the body did not suggest death from hæmorrhage. Both lungs showed advanced tuberculosis and the kidneys subacute interstitial nephritis.

The case has a certain medico-legal interest. In the first place the selection of a site behind the sternomastoid is very unusual, as is the position of the wound on the right side in a right-handed man. The superficial nature of the wound is also remarkable as it would scarcely have been imagined that a person intent on self-destruction would have satisfied himself with such a superficial incision. Death was no doubt partly due to hæmorrhage, partly to embarrassment of the heart produced by the entry of a few bubbles of air.

CASE 2.—An adult male Egyptian was seen to cut his throat in the street, after which he staggered along for about 50 yards and fell dead. On examination seven transverse wounds of the throat were found. These were all superficial and separate on the right side of the neck but joined together into one deep incision on passing to the left. Three of them, deeper than the others, started behind the level of the right sternomastoid; the other four, which were lower down and much more superficial, commenced midway between the sternomastoid and the middle line. They all passed almost horizontally across the throat and ended in a jagged incision on the anterior margin of the left sternomastoid.

Considerable damage was done to the deeper tissues of the neck and in the cartilaginous structures four well-defined incisions were observed. The highest of these passed horizontally through the thyroid cartilage and completely divided the larynx. The second passed completely through the larynx between the thyroid and cricoid cartilages. The third passed through the middle of the cricoid in the same horizontal plane as the others. The fourth passed through the lower part of the cricoid in front, but sloped downwards at an acute angle and reached the upper rings of the trachea posteriorly. This incision cut the left common carotid artery and the left internal jugular vein. There was also a superficial cut on the right wing of the thyroid cartilage which could be produced only by a cut commencing on the right and indicated that the victim was left handed.

Other structures divided included the thyroid gland in two places, the superior thyroid artery and the cricothyroid branch, and the sternohyoid, sternothyroid and omohyoid muscles, while the sternomastoid muscles on both sides were severely injured.

These two cases illustrate vividly the extreme difference which may be found in suicidal wounds. In the first the injury was of such slight extent and was in such an extraordinary position that the suggestion of suicide might not arise, while the second shows such excessive violence that it might readily be assumed that the case was one of murder. No doctor experienced in medico-legal work is likely to make a statement that such injuries were certainly self-inflicted or otherwise, without more evidence than is forthcoming from the examination of the injuries alone, but there is a tendency for medical men of less experience in these matters to be more dogmatic, and I trust that the publication of cases similar to the above may induce caution in giving a definite opinion as to whether a given wound is of a suicidal, homicidal, or accidental nature.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF MEDICINE.

DISCUSSION ON THE DIAGNOSIS AND TREATMENT OF COLITIS.

A MEETING of this Section was held on Nov. 23rd, when Dr. HUGH THURSFIELD, the President, took the chair, and Dr. ARTHUR HURST read a paper on this subject, which appears on p. 1151 of this issue of THE LANCET.

In the discussion which followed, the PRESIDENT said that in many years' experience he had never heard such a sane and clear address on a difficult subject. He agreed that many physicians had never seen what happened in a case of colitis, because they did not use the sigmoidoscope. He would extend Dr. Hurst's remarks on the bacteriology of intestinal diseases so as to include practically all intestinal infections, with the exception of such specific conditions as typhoid. Bacteriologists, radiologists, and clinicians appeared to have lost their heads on this subject during the last few years, and his hope was that Dr. Hurst's address would do much to bring the profession back to its moorings. With regard to the use of antidysenteric serum, for some years he had noted a group of infants who, particularly in the summer and autumn, had very violent attacks of diarrhœa, with high fever; several years ago he had concluded that these attacks were probably dysenteric, and in his ward at the Children's Hospital antidysenteric serum was at once given to cases showing these symptoms. The bacteriology was investigated afterwards, and in a fair proportion some types of dysenteric organisms were isolated. He was sure this course had saved the lives of many infants.

Dr. WILFRID EDGECOMBE thought that the main reason why Dr. Hurst had been able to be so precise in his generalisations was that he had long used the sigmoidoscope as a routine. It should no longer be regarded as an instrument for the surgeon alone. Referring to so-called muco-membranous colitis, Dr. Edgecombe agreed that there was no evidence of a true inflammation of the colon. "Colonic mucorrhœa" would better describe the condition, for it was purely a secretory neurosis, causing an excessive outpouring of mucus, to the accompaniment of colicky spasms; it was more common in psychasthenics than in neurasthenics. In comparing it with asthma Dr. Hurst had been very apt. Sometimes the mucous casts were very large, but usually there was no membrane; a few epithelial cells were present and some leucocytes, but practically never pus. Normal denizens of the alimentary tract were very numerous in these casts. Infection, he thought, was only secondary in this condition, but probably some intestinal toxæmia followed the retention and decomposition of the large collections of foul-smelling mucus. The effect of this on the nervous system made the patient worse. The subjects of colonic mucorrhœa were querulous individuals whose attention was focused on their abdomen; they had a muddy complexion and lustreless skin. They were constipated, and usually had run the gamut of aperients, which acted as irritants and perpetuated the excessive secretion of mucus, Nature's answer to the irritation. The attacks of colicky pain were due to a local spasm in the bowel. Many of these patients had visceroptosis, and presented the signs of what Dr. Robert Hutchison called "the chronic abdomen." Some had had the appendix removed, but without mitigation of the symptoms. He differed from Dr. Hurst about lavage of the colon for these cases; he thought it was good treatment. Every case demanded consideration of: (1) the local abdominal condition, (2) the general somatic neurasthenia, and (3) the mental condition, which was usually at the bottom of the whole trouble. He stopped aperients

and put patients back on to ordinary diet excepting fibrous vegetables. Usually they had become diet-faddists. Colonic lavage was done on alternate days, the fluid used being the equivalent of normal saline, made isotonic with the blood, and heated to 102° F. Forty ounces of this was allowed to enter the rectum at low pressure—i.e., from a height of 18 inches. After two or three applications large quantities of mucus came down, which had probably been clinging to the intestinal wall. Douches caused a speedy improvement in the patient. A good diet was given and massage and exercise ordered; to deal with the mental distortion it was necessary to persuade the patient that the secretion of mucus was normal and that there were better objects of interest than abdominal symptoms and evacuations. Among drugs he found most benefit from bromide, belladonna, and valerian; of the last named he used not less than a drachm of the ammoniated tincture. These drugs were very beneficial in moderately severe cases. Some of the serious cases seemed quite hopeless, and drifted into a state of hypochondriasis, and might even end in a mental institution.

Prof. L. S. DUDGEON commented on the frequency with which radiologists diagnosed colitis on the X ray picture. Evidence in favour of colitis was the discharge of leucocytes, pus, and epithelial cells from the rectum. Manson-Bahr and others had shown that when ulcers were seen with the sigmoidoscope, scrapings might reveal the organism when it had not been found by other means. He agreed with what Dr. Hurst had said about the bacteriology of the fæces. The fæcal flora varied considerably in healthy people according to the diet they happened to be taking. Extraordinary results were seen to follow gross dietetic errors. Very often a diagnosis of colitis was made on the strength of such unusual flora, partly induced, perhaps, by the use of various purgatives. He considered that ulcerative colitis could be put into three groups: (1) amœbic; (2) those due to the Shiga and Flexner group of organisms; and (3) those in which no Shiga or Flexner organisms could be found, an ulcerative colitis showing ulcers of the colon like those of bacillary dysentery. He considered that only two organisms could be regarded as abnormal; they were found in a certain number of cases. One was the *B. coli hæmolyticus;* the other, the *B. mucosus capsulatus*. With regard to the first of these, it was not a question of finding the organism once, but of finding it repeatedly in a patient who was passing blood and pus per rectum and who had ulcerative colitis. In two such patients he had seen very considerable benefit follow vaccine treatment, but only in two. The *B. capsulatus* frequently occurred in large numbers in abnormal conditions of the colon associated with ulceration. He thought that streptococcal invasion had nothing to do with ulcerative colitis.

Speaking of polypoid conditions of the colon, Prof. Dudgeon recognised three forms—true carcinoma of the colon, which caused polypoid growths; genuine adenomata of the bowel, which might or might not be associated with carcinoma; and the form met with in true chronic dysentery and ulcerative colitis—polypoid masses composed of granulation tissue and perhaps covered with mucous membrane. Only two kinds of treatment seemed good—diet and absolute rest. He could not understand there being any value in antiserum treatment of these cases, although admittedly Dr. Hurst had quoted cases in which the patient had markedly improved after it was given. He had never seen it do good in chronic bacillary dysentery, and he had no use for vaccine treatment in ulcerative colitis.

Dr. J. A. RYLE said that he had noticed much benefit from the use of serum and inspection with the sigmoidoscope in the kind of cases being discussed. Patients who had been making no progress for months—some for a year or two—had their symptoms immediately relieved and the appearance of the mucous membrane restored by the use of serum. One female patient, with advanced ulceration of the colon, had been very anæmic and ill, and weighed only 6 st. She had been treated in this way, and now weighed 10 st. and had never felt better. He had not seen the serious condition, polyposis of the colon, in any case being treated with serum, but it had been observed in two cases which had not had serum treatment. He maintained that amœbic ulceration could be diagnosed with certainty by using the sigmoidoscope, sometimes when negative reports came from the laboratory.

Dr. ADOLPHE ABRAHAMS spoke of the variety of conditions sometimes classed as colitis. He remembered cases in which rectal crises, carcinoma, pelvic tumours pressing on the bowel, and abdominal aneurysm had been diagnosed as colitis, simply because there was an abnormal quantity of mucus coming from the bowel. He agreed that mucomembranous colitis was a very definite entity, and one that called for careful consideration and treatment. It was admittedly a neurosis, especially of bowel mechanisms. London practitioners were a good deal debarred from spa treatment for such cases, but they could largely make up for this by using olive oil enemata and belladonna, the latter pushed to the toleration point.

Dr. PARKES WEBER asked whether the polyposis developing in ulcerative colitis was identical with that which followed amœbic or bacillary dysentery. He believed that cases of colica mucosa were now rare, and he regarded them as the result of an abnormal reaction which was found only in certain people. Everybody who indulged in dietary vagaries and neglected to take exercise was subject to abnormalities in bowel conditions and fæces. Muscular exertion seemed to improve the tone and motility of the whole bowel.

Dr. RENE WYBAUW spoke of having often seen the condition known as mucous colitis benefited reflexly by the successful treatment of cardiac irregularities.

Dr. HURST, in reply, expressed his disappointment that no surgeon had participated in the discussion. Medical treatment was satisfactory enough to enable him to say that surgery was seldom necessary. Of the 19 cases he had attended since the war only one died, and she might have died in any case as she had very severe broncho-pneumonia. None of the patients had died of the colitis, nor of indirect results from it, and 17 were still well. As to the treatment of mucomembranous colitis, he agreed with Dr. Edgecombe, but at one time the Plombières treatment had been so commonly used that he had seen it cause colitis when not previously present. Admittedly olive oil enemata were sometimes useful, but the olive oil did not dissolve the fæces. Experimentally, fæces had been placed in three test-tubes and covered with olive oil, water, and liquid paraffin respectively. At the end of 24 hours the fæces in the olive oil were even harder than before; water dissolved them well, and paraffin made a useful difference. Abdominal ptosis he did not consider important; in a series of quite healthy medical students he had found all sorts of abnormalities of position, the man whose viscera were lowest being a first-class forward in Rugby football.

SECTION OF ORTHOPÆDICS.

EXHIBITION OF CASES AND SPECIMENS.

A CLINICAL meeting of this Section took place recently at the Middlesex Hospital, the chair being occupied by Dr. GORDON PUGH, the President.

Rickets with Deformity of Femora.

Mr. E. T. BAILEY demonstrated the case of a male child, aged 1 year 10 months, the subject of rickets, who had an unusual bilateral deformity of the femur. There was a backward curvature of the lower end of the femur, immediately above the epiphysis, of a type which was unusual. The child was fed at the breast for only two weeks immediately following birth; it then had a proprietary milk for five months. At a year old the child had whooping-cough, and other illnesses followed. The other members of the family were healthy. The skiagrams of the case were

shown. The possibility that it was a case of renal rickets had arisen and been discussed, but, so far, no satisfactory specimen of the urine had been obtained, as the child was so young. An effort would be made to do so. He invited views.

Mr. BLUNDELL BANKART said the case came to his out-patient department and showed the evidences of rickets—the square head, the conformation of back and abdomen, the enlargement of the lower ends of the radius, and the crooked legs. But he had not previously seen in association with rickets the fixed flexure at the knees which this patient presented. In some features the epiphysial changes in this patient were not the characteristic ones of rickets, and he thought the trumpet-shaped contour of the extremities of the shafts of the long bones gave it a resemblance to renal rickets. If this was likely to be the condition, it would cause hesitation in undertaking operation for rectifying the deformity.

Mr. W. H. OGILVIE did not regard this as a case of renal rickets, as the change seen at the lower end of the femur did not resemble that of a recent case of renal rickets he showed to the Section. In the latter case the bone presented a more definitely moth-eaten appearance, and the deformity was due to the epiphysis having slipped. The lower ends of the bone showed a trumpeted appearance, but the diaphysis was spread out, and there was a markedly increased density at the lower ends of the bones. The bones in the present child did not show any signs of osteoporosis, such as was evident in his own case of renal rickets, and a further contrast was that this child now shown appeared to be well in general health.

Mr. T. H. OPENSHAW suggested that perhaps this patient had a congenital flexure of the knees, and that the rickets was a superadded condition. It was very unusual to find both knees flexed to an equal degree in a case of recent onset.

Mr. H. A. T. FAIRBANK said that even though the bones of this child were unusually dense, he inclined to regard this case as one of renal rickets; the condition of the lower end of the femur was, he thought, very suggestive of that. It was not a bending, but a fracture at one side of the bone. The dense bone at the surface of the shaft ran into the lower fragment in the way usually seen in renal rickets. The impression he had, based on his experience, was that one did not see juxta-epiphysial fractures unless the child was going down-hill and the bone was atrophic. The prognosis of such was very grave. He had seen two or three cases in which light treatment had definitely cured, for the time being, changes apparently rickety, but not cases which had progressed to the stage of sustaining fracture; they usually progressed downwards to death. If the present case was a renal one, it seemed that the bones had been at one time much less dense than now, and that, therefore, treatment had enabled the child to deal with its condition. He counselled examination of the urine before deciding as to operation.

Mr. BAILEY, in reply, undertook to have the urine examined, and a blood-urea test done.

Coxa Vara.

Mr. FAIRBANK showed the bones from a patient the subject of coxa vara, whom he exhibited at the last meeting of the Section. There was an unusual congenital deformity of the upper end of the femur, coxa vara, and a very short femur, with a bend in it a short way down the shaft. He did an osteotomy on the case, and was proceeding to over-correct the bend in the femur when death suddenly supervened, and no cause for this collapse could be discovered. There was even less than the usual amount of bleeding, and the bone oozed less than was customary; moreover, there were no evidences of shock. At the post-mortem examination the greater part of one lung was found to be indurated by a thrombosis in the coronary vessels. The specimen now exhibited showed that the neck was present and was cartilaginous, but not ossified. He had a similar case in which death took place under the anæsthetic, and there nearly the whole of one lung was an infarct. Neither of the cases was septic, as far as he could discover, and there did not seem to be sufficient shock or bleeding to account for the thrombotic condition. He therefore assumed that the clot began to form in the heart.

Osteomyelitis Variolosa.

Mr. P. J. VERRALL described, and illustrated on the screen, two cases of this condition which had been under his care in the last year. There was osteomyelitis of practically all the bones of the two limbs, including the metacarpals and the metatarsals, with septic arthritis of the elbows and wrists. It could be readily conceived that in the course of such a disease as small-pox there was a great deal of absorption into the bony system generally, with transient arthritis, pains in the bones themselves also being quite common, but actual osteomyelitis in the disease was a comparative rarity. Osler just mentioned it as a possibility. Recently two observers in America recorded what they regarded as the first case of this condition. A skiagram which Mr. Verrall now showed presented sinuses over all the metacarpal bones.

Osteomyelitis of the Clavicle.

The PRESIDENT showed a boy who, in May last, attended hospital for what was found to be osteomyelitis of the clavicle, and an abscess was opened. Last month practically the whole bone was removed without an anæsthetic, and the sequestrum was now shown. The skiagrams showed that the shaft had re-formed; he had not seen this happen before in membrane bone.

Mr. T. OPENSHAW said his experience was that clavicle bone did re-form. In one case he feared the end of the clavicle would collapse, but a new clavicle had formed in two years, very mis-shapen and very thick; but four years later there was a perfect clavicle, both as to shape and thickness. It was an indication that function regulated and determined the ultimate shape of the bone.

Ununited Fracture of Neck of Femur.

Mr. A. H. TODD showed a woman aged 30, who obtained a living by selling newspapers in a street pitch. She related that in March, 1924, she slipped on the snow, the impact being sustained on the left hip. She was treated at a provincial hospital four months by a Thomas splint, and was discharged, using crutches, as there was failure of union, and the shortening was about two inches. After walking a few hundred yards she had pain, and had been compelled to relinquish her work. Opinions as to what ought to be done for her were asked.

Mr. R. C. ELMSLIE said he thought the chance of getting good union in this femur, with such an amount of absorption at the neck was remote; but in a woman of this age the chance of securing reasonably good function was not by any means bad. He advocated removing the great trochanter, with the head of the bone, abducting the limb very widely, and trying to get the neck into the acetabulum, replacing the great trochanter an inch lower down in the shaft. Two years ago he operated on a man of 50 in that way, and though his duties involved climbing up rope ladders on to liners at sea, he had been six months back at work, and seemed to be doing very well. For nine months following operation he kept that man on a calliper splint.

Mr. OPENSHAW agreed with Mr. Elmslie that it was very unlikely there would occur union between the head and the great trochanter, as the surface was rounded off and devitalised. His own feeling would not be to scoop out the head from the acetabulum, though that could be done, but to break off the great trochanter, and put the top of the shaft into the acetabulum. The functional result of that, he thought, would be better than from any other treatment. If there had been fibrous union, a Hessing's splint would have constituted the best treatment.

Spontaneous Fracture through Neck of Femur.

Mr. H. C. EDWARDS showed a boy aged 6 years, who, in consequence of a cyst, sustained a spontaneous fracture through the femur neck. The boy, an only child, had never been strong, and he had been in bed for seven months prior to the hip giving trouble. He had had measles, which led to acute middle-ear disease, and for that the radical mastoid operation was performed. Chicken-pox was his last ailment. A week after his discharge from hospital he was walking in the street when he appeared to twist and crumple up, and was brought to hospital complaining of pain. The X ray showed he had an area of translucency in the neck of the left femur, and this was the site of the fracture. A double Thomas splint, with full abduction, was applied, and the position was maintained for five weeks, the Thomas being replaced at the end of that time by a double long Liston splint, being hinged at the left hip-joint so as to allow of full abduction. The patient was kept off his feet five months, and then was given a calliper splint, and allowed to walk. That splint he was still using. He was seen, by the skiagram, to have coxa vara, with the epiphysial line approaching the vertical. There was now no limitation of movement, except that of abduction, and the trochanter was raised. There was shortening to the extent of ¼ in. to ⅜ in. The problem now was as to how he should be treated for the coxa vara, or, most important, when it should be done. Should some time be allowed so as to see how the cyst remaining would behave?

Mr. ST. J. D. BUXTON said the question was whether all cases of cyst in bones should be operated upon, or whether they should not. He presumed that the purpose of the operation in most of the cases was to establish the diagnosis, though in most instances the skiagram enabled the nature of the disease to be known. There was no microscopical examination in the present case, but he agreed it seemed to be a cyst. It was curious that cysts should gradually become obliterated.

Congenital Malformation of Arm and Eyelid.

Mr. TODD showed a female child aged 6 years, whom he had known since she was a baby. There was a curious lump in the left eyebrow, with vertical grooves down it, while the right arm and hand presented a claw-like deformity. Except by applying splints to endeavour to correct the deformity nothing had been done. Skiagraphy of the skull was not satisfactory; he thought there might be a dermoid pressing on the motor area of the brain, thus causing the upper limb deformity. The question of treatment did not arise in this case, as the child was using her hand and arm, and the mother would not hear of any operative interference.

Deformity of Spine.—Swelling of Ankle.

The PRESIDENT showed two children with deformities of the spine, probably congenital. The first was a boy aged 6, who had only 11 ribs on one side, 12 on the other. His Wassermann reaction was strongly positive. The other, also aged 6, was a case of scoliosis; there was no evidence of rickets. Here also there was a strongly marked positive Wassermann. He had found that Wassermann was more commonly positive among children having congenital bony deformities than among ordinary hospital children. The boy with scoliosis had a double curve, and the heads of the femora did not appear to be calcified.

Mr. ELMSLIE said he recently saw a small boy who had a congenital malformation in the spine, and there were wedge-shaped vertebræ. There was a slight projection backwards at the site of the deformity, and the case had been diagnosed as spinal caries, and, to the distress of the father, a medical man, had been treated as such. It should always be possible to differentiate these cases from caries.

The PRESIDENT showed a boy aged 4 years, who was admitted to one of the London hospitals on account of swelling of the ankle, and was kept there seven weeks. Last January he came under the exhibitor's care in plaster, the diagnosis being tuberculosis of the ankle. When the plaster was removed, it was found that there was full movement, and but little swelling. A month later the ankle appeared to be normal, but a month later still, swelling recommenced, and again it subsided, skiagrams all along being negative. Last September the movements again became restricted, and there was swelling around the internal malleolus, but without undue heat. There was a small hæmatoma in the abdomen, and he thought it might be a case of hæmophilia. When the swelling again cleared, he was allowed to walk, but this caused pain and swelling, and therefore he was taken off his feet once more. The speaker had never known a case of the kind limited to the ankle-joint.

SECTION OF EPIDEMIOLOGY.

A MEETING of this Section was held on Nov. 26th, the chair being occupied by Dr. S. MONCKTON COPEMAN, the President, when Dr. G. F. BUCHAN (M.O.H. for Willesden) opened a discussion on the

HOSPITAL IN RELATION TO PUBLIC HEALTH.

The problem, he said, was a much wider one to-day than 20 years ago, and in order to visualise the extent to which hospital provision was necessary for public health purposes he took as his basis the requirements for an average community of 100,000 people. At the date of the passing of the Infectious Diseases (Notification) Act, 1889, the term infectious diseases was held to include only small-pox, cholera, diphtheria, erysipelas, scarlet, typhus, typhoid, puerperal, relapsing and continued fevers. But to these must now be added cerebro-spinal fever, encephalitis lethargica, acute poliomyelitis and polio-encephalitis, ophthalmia neonatorum, acute primary pneumonia, acute influenzal pneumonia, trench fever, dysentery, malaria, plague, and tuberculosis. Notification implied isolation of the sufferer, but this did not suffice unless there were means provided for the patient to recover. It had been found that for the diseases notifiable under the 1899 Act, one bed per 1000 population sufficed, while for epidemic diseases of the central nervous system the 100,000 people predicated would require one bed, a similar provision being needed for puerperal fever and puerperal pyrexia cases, on the basis of each case lasting six weeks; while for ophthalmia neonatorum one bed was ample. With regard to the acute pneumonias, on the basis of 124 notifications in the 100,000 population, and the admission of 40 per cent. of the notified cases, he would set apart eight beds. It did not seem necessary to make any special provision for cases of trench fever, dysentery, malaria, and plague. Experience with tuberculosis showed the need of one bed for every 1500 of the population, and the inclusion of this among the notifiable diseases had raised many new problems of hospital accommodation. As the tuberculosis authority was not usually either the sanitary authority or the infectious diseases hospital authority, hospital provision for this disease had been generally regarded as a separate matter. There was need for unification here. As regards hospital provision for complicated and uncomplicated cases of confinement Dr. Buchan's experience showed that about 20 per cent. of all confinements would be most suitably accommodated in hospital, and he considered that for a population of 100,000 16 beds for confinement cases were needed. It was not so clear what provision should be made for children under 5 years of age, but, on the figures he gave for Willesden, at least 12 beds would be wanted, and for school medical work 13. Only a small proportion of new cases of venereal disease required hospital treatment, and three beds would probably be found ample. Thus a total of at least 221 beds should be provided for 100,000 people.

Dr. Buchan went on to deal with some pressing public health problems. One of these concerned measles, and he urged that there should be hos-

pital room for severe complicated cases of that disease, and seven beds should be reserved for them. Whooping-cough also, like measles, caused many deaths, and at least four beds should be set apart for complicated cases of it. On the question of cancer of the breast, he pointed out that in Leeds it was found that if operation was performed while the disease was still restricted to the breast, 87 per cent. of the cases were still alive at the end of ten years after the operation; but if at operation the disease had advanced beyond the breast only 5 to 6 per cent. survived for that period. The accommodation for dying cases of cancer was scarcely a public health problem. He saw no reason why a hospital, suitably planned on the pavilion system, should not admit cases of all the diseases for which a local authority could make provision. He favoured a general hospital, with all the necessary special departments. In such an institution research could also very well be undertaken, chiefly, perhaps, in regard to the antecedents of patients coming to the hospital, in efforts to trace the factors influencing the production of the disease conditions; also the results of treatment and the general after-history of the patients.

Discussion.

Dr. T. CARNWATH considered that Dr. Buchan had approached the question from a commonsense point of view, though probably he would admit that some of the estimates given could be revised with advantage. For example, the suggestion of six beds per 100,000 for cases of rheumatic disease must be compared with Birmingham's provision of 100 beds for that disease to serve a population of about a million, and even the 100 were not found to be sufficient. Dr. Buchan's remarks concerning the present development of hospital accommodation would probably be echoed by most members of the Section; few of those engaged in public health work could be satisfied with the present arrangement of hospital provision. It was unsatisfactory to have little maternity homes and isolation hospitals springing up in all sorts of places, having no connexion with any central institution and no facilities for research. Much could be said in favour of the big hospital, such as Dr. Buchan portrayed, though small hospitals might well act as feeders to the larger one. In the matter of such cases as those showing the sequelæ of encephalitis lethargica a wider area must be contemplated. He welcomed the opener's comparison of the State hospital with the voluntary hospital, and it reminded him of the up-to-date equipment and staffing of the municipal hospital in Philadelphia, which he saw on his visit to the States, which impressed him very much. There the whole organisation of the hospital work was under a director of health, and the work was divided into a hospital section and a general section. Not only was the laboratory one of the finest he had ever seen, but the organisation for following up cases afterwards was well worthy of emulation on a large scale in this country, for in Britain among the large numbers being operated upon the after-history was known in only a small percentage.

Dr. J. D. ROLLESTON pointed out that in Paris and a number of other large towns on the continent there were not found special isolation hospitals for children, the pavilions for the treatment of infectious diseases being placed in the grounds of the ordinary children's hospitals. Only for adult cases were special isolation hospitals provided outside the ordinary hospital areas. The treatment of cases of infectious disease in ordinary children's hospitals was a matter of interest, as the best men on the staffs of those hospitals were likely to pay special attention to fever cases, and much valuable work on immunisation had been done in children's hospitals in recent years, especially in connexion with diphtheria and measles. There was great scope for study and research in isolation hospitals, not only in epidemiology, but also pediatrics, general medicine, and the history of medicine.

Dr. HUGH MCEWEN said many felt that in the past too many cases of scarlet fever had been isolated, and that a large number of patients with that disease might well, with due precautions and care, be nursed and treated in their own homes. He did not agree with the idea of some that small-pox cases could safely be treated in the same institution as other diseases, even though, apparently, it was done in Denmark. Dr. Buchan's comments on research work were very much to the point.

Dr. JANET LANE-CLAYPON asked whether there had been any real shortage of beds, and, if so, how severe that shortage was. With regard to cancer, she thought that in a neighbourhood like London theory was hardly likely to accord with practice in regard to the number of beds, because many cancer patients from all parts of England came into London for operation. Roughly, about 50 per cent. of the cancer cases came from outside the metropolitan area, therefore considerable provision had to be made in this respect for cases living outside that area. The proportion of inoperable cases could be altered, because obviously nearly every case was operable at some stage if it could be seen at that stage, and when the proportion of inoperable cases to the total had been reduced more bed provision would have to be made. Inquiry had been instituted as to the amount of delay in the admission of cases of cancer of the breast, and it was found that, for all practical purposes, there was no delay; in 800 cases there was a delay of more than a few days in only two, and in those the interval was purely accidental.

Dr. M. B. ARNOLD spoke of the difficulty of allotting beds to cover seasonal requirements, and said he thought most of Dr. Buchan's observations were founded on the assumption that the demand for beds would be steady month by month. But with regard to diphtheria, which most would prefer to treat in hospital, such a steady demand would not occur. At certain times isolation hospitals were almost forced to overcrowd, while at others the staff had to stand more or less idle. During the slack times the accommodation could be deferred for a time without definite harm to the patient. It seemed to him possible that someone responsible for supervising the needs of a district could smooth out these admission irregularities.

Dr. G. C. TROTTER remarked that Dr. Buchan seemed to include everything in his suggested hospital, so that there would be no need for other kinds. As to the idea of leaving cases of advanced cancer to the guardians, he did not see why that should be done, as there was still held to be a stigma attached to the Poor-law institutions. And if these cases were left at home it imposed a great hardship on the family, and the nursing and attention usually knocked up one or more members of it, even if a district nurse's services were secured to relieve the situation. Altogether he thought Dr. Buchan had made out his case. As time went on perhaps the stigma of the Poor-law would be removed.

Dr. M. RANDALL, speaking as one with experience of a place of about the size Dr. Buchan was dealing with, said it meant that more beds would be required and that opened the question of who would look after them. Sufficient fully trained nurses might be a difficulty; he did not think so-called fever nurses were capable of dealing with general cases, including surgical.

Dr. T. S. MCINTOSH mentioned that for six months he was assistant to Dr. Buchan at Willesden, and said he regarded the paper as very valuable, if only for the figures given of the estimated accommodation required for the various conditions. He had himself seen the hospital in Amsterdam which had been referred to, and was surprised to find that small-pox was being treated in a general hospital. But the medical superintendent had no fears about the spread of the infection to other patients. Yet the small-pox pavilions there were less than 40 feet from the street and from some of the other pavilions. He agreed that the best plan was to have one hospital for all kinds of cases, and it was desirable boldly to proclaim that it was the duty of the community to provide for

everyone in need of medical and surgical treatment who could not afford the usual fees.

The PRESIDENT said scarlet fever was now of so mild a type that it seemed unnecessary, and a waste of public funds, to treat it in hospital. But 30 years ago it was a much more serious disease. Measles had become more dangerous, and diphtheria was increasing. Cancer at the present time was largely on the increase, and many cases came for treatment to London from outside the metropolitan area. Many of the infirmaries had no cases of advanced cancer, and some cases did not remain in those institutions for more than a couple of months. Advanced inoperable cases could not be looked after at home, as they upset the household too much, and a large proportion of them could not at present come into hospitals or other public institutions.

Reply.

Dr. BUCHAN said he did not regard small-pox as so terrifically infectious as some of the older authorities considered it to be. And if anyone proposed to treat it along with other diseases in a general hospital, he would not try to dissuade him from doing so. Whatever people might say as to the number of Poor-law beds available, his view was that there were not yet sufficient beds in this country available for public health work.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.

A MEETING of this Society was held on Oct. 28th, when Dr. J. M. CROMBIE delivered a presidential address on the

Treatment of Fractures of the Mandible.

The commonest causes of these fracture, he said, are motor-cycle accidents, blows of the fist, kicks from horses, and industrial accidents. Generally the fracture is compound into the mouth; the site may be almost anywhere, but it is most often in the bicuspid or canine region. Very often a fracture there is accompanied by a fracture of the angle or ascending ramus on the opposite side. Oblique fractures are the rule, although transverse fractures are met with occasionally at the symphysis. In addition to the usual symptoms of fracture there are several special features in fracture of the mandible—viz., a little hæmorrhage into the mouth, inability to close the mouth and to articulate properly, and dribbling of saliva. The fragments can be seen to move when the patient swallows and there is usually a definite irregularity in the line of the teeth. In single fractures the smaller fragment usually over-rides the larger; in double fractures the centre fragment usually drops downward. Dislocated teeth are very common and care should be taken that a tooth has not dropped between the fragments. Fractures of the ascending ramus are usually accompanied by much swelling but very little displacement. Crepitus, difficulty in moving the jaw, and deviation to the affected side are the symptoms of fracture of the neck of the condyle.

Before treatment is begun, said Dr. Crombie, a good X ray photograph must be taken—especially an oblique view. A preliminary cleansing of the mouth is also necessary, as well as a dose of antitetanic serum. In the region of the ascending ramus and angle very little in the way of treatment is required except the support of a bandage. Where there is displacement of the fragments of the mandible and splinting is to be carried out, impressions of upper and lower jaws must be taken in modelling composition. Impressions of these are cast in plaster-of-Paris and if the fracture is in the dentigerous area the lower model is sawn through the side of the fracture and articulated with the upper model so that the condition of the jaws is as it was before the fracture occurred. Many kinds of splint have been devised for fixation, but most of them are modifications of the classical Hammond or Gunning splints. The original Hammond splint consisted of a piece of wire which was fitted round the inside and outside of the necks of the teeth in the lower jaw; after reduction of the fracture into this splint fixation was obtained by figure-of-eight wiring round the teeth. This was made of iron wire which in practice was too soft and had a nasty taste, and also stained the teeth. More recently gold, dental alloy, or German silver-gilt have been used. In a modification of this splint, which he has devised, said Dr. Crombie, bands are fitted round the necks of the second bicuspids or other suitable teeth and a band fitting the inside and outside of the intervening teeth is soldered to these. The original Gunning splint was made of vulcanite and covered both upper and lower teeth and part of the gum with a hole in front for speech and one at each side to allow the saliva from the parotids to enter the mouth. For cleansing purposes it was drilled all over with small holes. The fragments were reduced into the splint and the jaw held up by a four-tailed bandage. The modern splint is made of metal and only covers the teeth, the upper and lower cups being soldered together if the mouth is to be kept shut; if the mouth is to be kept open they are joined by soldered struts. This splint is usually cemented on to the teeth and an aluminium chin support is used for a day or two.

Dr. Crombie believed that fractures in the dentigerous area of the mandible should be treated by a single Gunning splint, cemented on. With this treatment, he said, the temporo-maxillary joint does not stiffen and after a few days ordinary food can be taken. It is possible to use this splint only when there are teeth on each side of the fracture; otherwise a double Gunning has to be used. Shaky teeth should be left as they often heal in place and if they do not they can easily be removed later. Where there is a comminuted fracture with much sepsis, a Payne's cradle splint is to be recommended; this is almost a double Hammond, the upper and lower splints being held together by cross struts. Free drainage is thus obtained and the mouth can be washed out easily with an antiseptic solution. Discussing the treatment of cases where there is much bone loss, Dr. Crombie said that it is of the greatest importance to keep the fragments in their proper relationship to the upper jaw. In edentulous people he recommended wiring or fixation of the bony fragments by kangaroo tendon. In conclusion, he stated that no matter how a fracture of the mandible is being treated, absolute cleanliness of the mouth is essential. The mouth should be syringed with an antiseptic (mixture of equal parts of carbolic acid and liquor potassæ: one volume of mixture diluted with 39 volumes of water) before and after each meal, and if the splint is detachable it should be removed and boiled. The food must be soft, but with the aid of a mortar and pestle a varied menu can be given.

Lesions of the Hip-joint.

A further meeting of this Society was held on Nov. 4th, when Dr. JAMES CROMBIE took the chair, and Mr. ALEXANDER MITCHELL gave a demonstration of lantern slides illustrating diseases of the hip-joint. Dealing with tuberculous lesions of this joint, Mr. Mitchell laid emphasis on the persistent tendency of the head of the femur to become dislocated—a condition which if left untreated led to shortening of the leg, even up to four inches. Fixation of the limb in a fully abducted position with extension prevented the head slipping out in this way, and combined with treatment along modern lines would lead to cure of the disease, probably with impaired movement, but with little shortening or subsequent disability. Unless this was thoroughly understood, said Mr. Mitchell, even the most faithfully carried out treatment would not produce the desired result. Difficulties such as proper fixation and nursing could be overcome to a great extent by prolonged institutional treatment and careful observation afterwards. In conclusion, Mr. Mitchell put forward a plea for the more active treatment of fractures of the neck of the femur in the aged.

A discussion followed.

Reviews and Notices of Books.

THE FUNDAMENTALS OF SCHOOL HEALTH.

By JAMES KERR, M.A., M.D., D.P.H. Cantab., Consulting Medical Officer to the L.C.C. London: George Allen and Unwin. 1926. Pp. 859. 35*s*.

THE author of this treatise has had unrivalled qualifications for his task. He has specialised both in ophthalmic and in aural surgery, and his experience in clinical and administrative capacities has been such as to earn him the sobriquet "the Father of School Hygiene." If anyone were not aware of these facts he would be able to deduce them by applying the canons of higher criticism to this text-book.

The book begins with an exposition of modern views of heredity; then follow chapters on growth, physique, and nutrition—veritable store-houses of facts and figures interspersed with practical comments. There is also an account of the various formulæ which have been devised to estimate nutrition and physique, and the recent methods by which Martin Flack and others have sought to test physical efficiency. A description of vitamins and their relation to other food factors is included; in conjunction with this should be read the chapter on Light as a Healer, which deals particularly with the influence of ultra-violet rays, and the résumé of our knowledge of rickets and dental caries.

Sleep is discussed from the practical aspect; the treatment of enuresis is not so full as the difficult problem deserves. The chapters on the Spine and the Foot are of much general interest; the former contains a note on orthostatic albuminuria, here called lordotic. Tuberculosis, rheumatism, and heart conditions are considered in detail, the indications for prophylaxis and general care being given. According to Dr. Kerr, actual phthisis in children of school ages is a rarity, amounting to no more than 4 per 1000, but there are large numbers of children showing pulmonary gland infection, which is extremely amenable to treatment by ordinary hygienic methods. In this way he reconciles many apparently conflicting estimates of the number of tuberculous children. A sound explanation is given of what is here meant by hygienic treatment; and the school aspect is dealt with under the heading of open-air schools, which, as Dr. Kerr emphasises, must be far more than mere schools in the open. An attempt is made to describe mental development and intelligence from the physiological standpoint; some of the functions assigned to the supragranular layer of the cortex and to special areas of the brain can hardly be regarded as established. The presence of a localised moral centre is certainly not generally accepted; and, indeed, the whole question of the moral imbecile is in some confusion. Dr. Kerr is an enthusiastic advocate for the sterilisation of the mentally defective.

The later part of the work deals with medical inspection, administration, and infectious diseases; here a valuable citation of some legal points is followed by an account of the hygiene of school buildings, including notes on the official requirements. A section on the health of teachers, the criteria of their acceptance into the service, and the procedure and circumstances of sick leave and invalidity is welcome. Lastly, there is a concise explanation of the use and methods of statistics. No bibliography is supplied, but references are given in the course of the text.

The volume is packed with information, and will be valued by everyone who is concerned with the health of children. And what practitioner is not?

THE SURGICAL TREATMENT OF GOITRE.

By WILLARD BARTLETT, M.D. St. Louis. London: Henry Kimpton. 1926. Pp. 365. 37*s*. 6*d*.

THIS is probably the largest volume yet published in England or America that is wholly devoted to the surgery of the thyroid gland. Every aspect of the subject is dealt with exhaustively and the text is throughout based on the author's extensive personal experience. It is not a book that will fill the occasional thyroid operator with confidence, for a careful reading of it will certainly impress upon him the many difficulties that are sure to be encountered, but he will obtain from it much sound advice which will probably save him from some of the pitfalls. The book will be read with interest by the experienced operator who will note the many idiosyncracies of Dr. Bartlett's technique, perhaps with profit to his own. Of particular value, perhaps, is the chapter on anæsthetics; the author favours a combination of local with light general anæsthesia. Twenty-three pages are devoted to the subject of ligation of arteries, Dr. Bartlett having found the iodine medication of Plummer to be less efficient than it appears to have been at the Mayo Clinic. In this he is at variance with many other operators. The book is fully illustrated.

The Thyroid Gland. By CHARLES H. MAYO, M.D., and HENRY W. PLUMMER, M.D. The Beaumont Foundation Lectures. Same publishers. 1926. Pp. 83. 8*s*. 6*d*.

A SUBJECT so debatable as the diseases of the thyroid gland and their treatment is productive of an increasing flow of literature. For those who are too busy along other lines to keep pace with the output a concise summary of our knowledge is of value. The position in 1925 is well summarised in this slim volume, where each author is responsible for about half, and each has made his portion of great interest. Dr. Mayo has contented himself with giving an account chiefly of the work and conclusions of others concerning the history, anatomy, physiology, and chemistry of the thyroid, with the ætiology, bacteriology, geography, and metabolic influence of goitre. Thus he describes the work of Rosenow upon the bacteriology of goitre, with his claim to have reproduced diseases of the thyroid in animals, but makes no comment on the validity of these claims or their application in treatment.

Dr. Plummer's contribution, on the other hand, expresses chiefly his personal views, and he leaves the reader in no doubt as to their nature. He deals in an interesting way with the classification of goitre and the clinical aspects of hyperthyroid states. He then discusses the theory of thyroid dysfunction, and this section, which summarises his experience with the use of iodine, is the most valuable part of the whole book. It was in March, 1922, that he first began the administration of Lugol's solution which has had so profound an effect upon the therapeutic and surgical treatment of hyperthyroidism. Control of the disease has been so satisfactory that Dr. Plummer finds that preliminary ligature of the thyroid arteries has been almost abandoned. Operative mortality has been very greatly reduced and post-operative control can also be maintained. He makes some startling statements concerning the treatment of colloid goitres with desiccated thyroid. The possibilities of thyroid medication will be fully impressed on anyone who reads Dr. Plummer's stimulating pages.

INTRACRANIAL LESIONS.

Studies in Intracranial Physiology and Surgery. By HARVEY CUSHING, M.D. The Edinburgh Cameron Prize Lectures. London: Humphrey Milford, Oxford University Press. 1926. Pp. xxii. + 146. 8*s*. 6*d*.

EVEN to-day the belief is too widely held that the physiology and pathology of the brain is but little understood and that the treatment of intracranial lesions holds out but small hopes of success. Dr. Harvey Cushing has already done more perhaps than any other living worker to dispel this belief, and these lectures will bring conviction to any sceptics who read them carefully. A wealth of information is

here gathered in a small space, and is presented in an easy narrative style. The story is not confused by a mass of pathological and scientific detail. We regret only that this course of lectures was not expanded to include an account of the author's work upon the meningiomas and the tumours of the nervus acusticus.

The first lecture is devoted to a consideration of the cerebro-spinal fluid and its circulation. Step by step the growth of our knowledge in the method of the secretion and absorption of the fluid is traced in an account which becomes the more interesting in that Dr. Cushing shows how his own knowledge was obtained and his own difficulties overcome. It is in the development of this line of work that he and his colleagues have specially excelled; but although he describes fully his own chemical and experimental investigations, full credit is given to other workers. The ingenious experiments of W. E. Dandy in producing hydrocephalus; the work of L. H. Weed in determining the method of absorption of the fluid and of altering the amount of fluid by the intravenous injection of hyper- and hypotonic solutions; the observations of Harvey upon the functions of the meningocytes to form a new limiting membrane, to keep the fluid paths free of blood and inflammatory products, and their importance in the formation of the meningiomas—all these are described in detail. In the second lecture, which is devoted to the pituitary gland, a few historical notes are followed by a detailed description of the histology and functions of the individual portions of the gland. Of especial interest is the account of the importance of the pituitary in the production of glycosuria and polyuria. The latter part of the lecture is devoted to surgical considerations, and a warning is given that at present it is premature to believe that the internal secretions of the gland can be controlled by surgical procedures. The last lecture, which is entitled Intracranial Tumours and the Surgeon, describes shortly the enormous progress that has recently been made in the diagnosis and treatment of intracranial tumours, and it is shown that the diagnosis of the presence of the tumour, of its site, and of its nature, has reached a stage that a few years ago would have been regarded as impossible. Dr. Cushing lays great stress upon the fact that the prognosis largely depends upon the pathological nature of the tumour, and he gives an account of his work with Dr. P. Bailey in classifying the gliomata and other neoplasms. At first sight this classification appears to be very complicated, but it is shown so clearly that the clinical progress depends on the variety of tumour that a knowledge of these types becomes essential.

The work is one of great interest and should not only be read by those who are interested in cranial surgery, but by all practitioners, for it demonstrates how much may be expected from the introduction of modern surgery into the treatment of these difficult cases.

THE INNERVATION OF THE URINARY BLADDER.

Die Innervation der Harnblase; Physiologie und Klinik. By Dr. HELMUT DENNIG, Privatdozent for Internal Medicine, Heidelberg. Berlin: Julius Springer. 1926. With 13 illustrations. Pp. 98. M.6.90.

DISSATISFIED with the usual descriptions of the innervation of the urinary bladder, and aware of the discrepancies and contradictions in these, Dr. Dennig has undertaken afresh an investigation of the problem, which he has approached from anatomical, physiological, and clinical sides. A full account is given of the results of section of the various nerve supplies (nervi pelvici, hypogastri, and pudendi), and of the clinical symptoms and signs in bladder disorders of spinal origin. The sensibility of the bladder receives careful consideration. There are chapters on the central (cerebral) representation of bladder mechanisms, on functional bladder impairment, on pharmacological investigation, and on diagnosis and treatment. More than nine pages of references are appended. It is difficult to give even a precis of the author's findings, in view of their detailed character and their wide range (from anatomical minutiæ to the "symbolic pollution" of the psycho-analyst). But we have found the book peculiarly interesting and informative, and commend it to the neurologist and clinician because of its scientific tone and its cautious conclusions. It would be assured of further appreciation were it to appear in an English edition.

CAVERNOUS SINUS THROMBOPHLEBITIS,

And Allied Septic and Traumatic Lesions of the Basal Venous Sinuses. By WELLS P. EAGLETON, M.D., Medical Director, Newark Eye and Ear Infirmary, Newark, N.J., &c. New York: The Macmillan Company. 1926. Pp. 196.

Dr. Eagleton has written a record of personal experience in the diagnosis and treatment of the always somewhat serious affections of the venous sinuses of the brain, in particular of the cavernous sinus. His method is to illustrate the ætiology, clinical varieties, and complications by specific clinical cases in greater or less detail, and on these to pass some critical comment. Numerous references are given to the literature at the end of each chapter or section. A presentment of this kind has both advantages and disadvantages; if the reader goes carefully through the clinical records his patience will be rewarded; yet he may at the same time get the impression that the synthetic study of the author's abundant material leaves a little to be desired. We miss really adequate anatomical diagrams or drawings of the structures with which he is dealing, for those on p. 111 are curiously incomplete; the clinical and pathological photographs are good. The chapter on differential diagnosis is unexpectedly meagre, whereas those devoted to treatment are more satisfying.

JOURNALS.

QUARTERLY JOURNAL OF MEDICINE.—The October number contains the following articles. Studies in Calcium and Phosphorus Metabolism. Part IV. The Influence of Free Fatty Acids in the Intestine on the Absorption and Excretion of the Mineral Elements, by S. V. Telfer. Previous papers have been published by the author in this journal on Calcium and Phosphorus Metabolism (*Quart. Jour. Med.*, 1922–23, xvi., 45, and 1923–24, xvii., 245) and the series is here continued. A child suffering from catarrhal jaundice formed the subject of the investigation and a study of mineral metabolism was made at three periods of the illness showing widely different levels of fatty acid concentration in the intestine, owing to alteration in the elimination of bile. Phosphorus absorption was greatest in the first period of the illness, when bile was absent from the intestine and a large excess of fatty derivatives were present. The relationship between this and the calcium combinations in the gut are also discussed.—Studies in Calcium and Phosphorus Metabolism. Part V. Infantile Rickets: the Excretion and Absorption of the Mineral Elements and the Influence of Fats in the Diet on Mineral Absorption, by S. V. Telfer. Further researches are detailed on the excretion of mineral elements in infantile rickets. Early cases were investigated, the minerals in the urine and fæces and the composition of the fæcal solids being determined. The results are compared with similar data previously obtained in normal subjects. During the active stage of rickets there is an excessive loss of mineral salts in the fæces, during healing there is an increased absorption from the intestines. The influence of fat in the diet was also determined, and it was noted that in accordance with their therapeutic values fish-liver oils increase the mineral retention values in rickets, whereas olive oil

and butter had no such effect. It is suggested that cod-liver oil produces its action in rickets by allowing free absorption of the mineral elements from the gastro-intestinal tract.—The Effect of Exercise on the Pulmonary Ventilation and Rate and Depth of Breathing in Chronic Bronchitis. Paper I. By J. M. H. Campbell and E. P. Poulton. A series of patients suffering from chronic bronchitis of varying grades of severity were housed for the night and the greater part of the day in a chamber containing 40 per cent. of oxygen for a period of a week. Observations were made on the respiratory exchange before, during, and after this period. The effect of exercise upon the ventilation and respiratory exchange was especially investigated. In this paper the pulmonary ventilation of patients with chronic bronchitis, not undergoing oxygen treatment, is considered before and after exercise. It was found that the ventilation at rest is just above normal, whereas the alveolar ventilation is about the same as in health. Exercise increases the rate of respiration, but the alveolar ventilation is relatively low. The fact that normally an increase of CO_2 increases the respiratory depth, and a deficiency of O_2 increases the respiratory rate was confirmed.—The Effect of Exercise on the Respiratory Exchange in Chronic Bronchitis. Paper II. By J. M. H. Campbell and E. P. Poulton. The changes in oxygen intake and carbon dioxide output as the result of exercise in cases of chronic bronchitis are now described. More oxygen was used during work and the percentage of carbon dioxide in the expired air was invariably lower in chronic bronchitis than in health. This appears to be the essential factor of the breathlessness. In myocardial disease the gaseous exchange may be very poor in spite of deep breathing. The effect of residence in the oxygen chamber will be described in a third paper.—The Action of Insulin in Glycogen Formation and its Therapeutic Application, by R. D. Lawrence. Although it is recognised that insulin is a necessary factor in carbohydrate metabolism, producing on injection a condition of hypoglycæmia, the mode of action is in doubt. Here it is definitely stated as proven that insulin forms glycogen and that this is its main, if not its sole, action. Insulin is therefore anabolic, preparing and storing carbohydrate for combustion, although not actually burning it. The effect of exercise on a diabetic who is taking insulin is to burn up the carbohydrate, empty the glycogen stores, and thus produce hypoglycæmia. Insulin is also probably essential for the storage of glucose produced from protein, in the form of glycogen, and it may also check the formation of new sugar from protein. It is almost certain that fat is converted into glucose, and this is not changed into glycogen in the absence of insulin. It is possible that the production of ketones is a normal step in the conversion of fat into carbohydrate, which is, however, a gradual process. If the change is unduly accelerated in disease or starvation, by the deficiency of combustible carbohydrate, then the ketone bodies may be formed so rapidly as to produce clinical ketosis. It is also suggested that when glycogen is deficient the stimulus for the conversion of fat into carbohydrate is supplied by a hormone from the pituitary. The paper concludes with a consideration of the therapeutic aspect of the glycogenic theory of insulin action.—Some Observations on the Recorded Mortality from Diabetes in Recent Years in England and Wales as a Whole and its Principal Divisions, including London, with Special Reference to the Introduction of Insulin, by Matthew Young and W. T. Russell. By the middle of the year 1923 insulin was available in this country in sufficient quantities for the treatment of diabetes. An endeavour has been made to determine the effects of its use upon the mortality figures for diabetes and the age distribution of the disease. There is no accurate information available as to the number of diabetics in this country, but if the average duration of life is five years from the date of diagnosis of the disease, then there would be about 24,000 diabetics in England and Wales in the period 1923–24, and 29,000 for the British Isles, and of these 40 per cent. would be aged 65 and upwards. The figures show that previous to the introduction of insulin the mortality-rate for diabetes was definitely falling, owing probably to treatment by starvation. Since the introduction of insulin treatment the further fall in the death-rate has been relatively slight.

THE JOURNAL OF INDUSTRIAL HYGIENE for November is devoted entirely to various aspects of silicosis. In the opening paper E. L. Collis deals yet again with the statistical characteristics of dust-phthisis, but he reinforces old arguments by appeal to new and as yet unpublished data of occupational mortality for the years 1921–23. The data confirm in a signal way such earlier conclusions as that silicosis is only one of the dust diseases, of which bronchitis is the most important, that it occurs in association with Bright's disease, and that it possesses definite statistical characteristics which enable its presence to be detected, as, for example, among coal-miners, even when the phthisis mortality is below normal.—This latter point is taken up in the second article by N. Tattersall from the clinical side. He tells of the dust-risk for that small group of miners who sink and tunnel through sandstone rocks to reach the coal seams, and then describes the clinical features of 22 such miners who came under his observation as tuberculosis physician; he illustrates the silicosis found by six convincing radiographs. The condition is clearly identical with that seen in South African gold-mines, and is equally fatal. Dr. Tattersall instances six men who, three and a half years ago, were working together boring a hard heading, all of whom have since died of tuberculous silicosis.—Some relief to the deadly nature of silica dust is given by P. Heffernan, who tells of exposure to this dust without the occurrence of silicosis; he introduces his paper by interesting references to the ancients, whom he says did not suffer from stone-masons' disease, because they seldom used sandstones for building purposes. He then tells of certain brick-makers in Derbyshire who make silica bricks, but, although the process is a dusty one, do not suffer therefrom. The dust in this instance is composed of fine silica sand mixed with clay, which holds the bricks together (silica 83 per cent. and clay 9 per cent.). The only cases of silicosis seen among 176 regular brickmakers had worked previously as dressers of Derbyshire gritstone. Comparative radiographs are given of such a stone-dresser and a silica brickmaker, which show the lungs of the latter clear. Statistics are given showing a phthisis mortality per 1000 of 7·7 for Derbyshire gritstone masons and of 0·6 for the brickmakers. This immunity from silicosis when the silica dust is mixed with clay is comparable to that previously found in Stirlingshire and Yorkshire. The reason is yet unknown.—The next article, by E. H. Kettle, is a summary telling of his own experiments with silica. They show that silica is a definite tissue poison, and that when fine silica dust is introduced into the body it passes fairly rapidly into colloidal solution; in this form it attacks and kills the living tissues. Such necrotic foci provide a pabulum, especially favourable to the growth of tubercle bacilli, which, after injection, are found in far larger numbers in such silicotic tissues than in tissues damaged by other necrosing agents. Prof. Kettle holds that the silicotic lung favours the tubercle bacillus, not because it is fibrotic, but because it contains silica.—The series of articles is completed by a note by P. S. Hay describing shortly a dust-trap for catching dust generated by percussive rock-drills. Compressed air escaping from the drills is used, to act on the ejector principle for creating a localised exhaust draught. This draught sucks away the dust as it is formed and carries it into a filter formed of a flannel cylinder, which terminates in a metal box. The filtered air escapes from the flannel, while the dust drops into the box. The device should prove of value wherever percussive drills are used, either in mines or for dressing granite.

THE LANCET.

LONDON: SATURDAY, DECEMBER 4, 1926.

HYGIENE IN THE ELEMENTARY SCHOOL: PRECEPT AND PRACTICE.

IN his report[1] for 1925 to the Board of Education Sir GEORGE NEWMAN says that "it is common knowledge that a considerable number of schools throughout the country fail to reach a minimum standard of health and sanitation." He cites one county where there are 51 schools with no water-supply at all; 97 whose old and unhygienic desks require replacement; 62 in which the playgrounds are unsuitable in size, position, or surface; and 35 with no other sanitary accommodation than privy middens. Reference to the reports of school medical officers will show that in many urban districts conditions are no better. One of these officers, for instance, writing of a county borough with a population of 91,000, makes the following statements:—

"the majority of the schools were erected prior to 1880 . . . certain school buildings are out of repair, the roof gutters and exterior walls being defective and damp in places. . . . Many of the schools are provided with trough closets and it is quite common to find them in a foul condition. . . . At almost every school the urinals are not provided with flushing apparatus, and complaints have been received of the stench arising from these conveniences. The major portions of the playgrounds at several schools are unpaved—becoming pools of water and mud in wet weather."

These conditions are not exceptional; the criticisms apply to elementary schools all over the country. But to tell the truth in plain language is often impolitic when a medical officer is faced by a committee which has false standards of economy, is versed in procrastination, is ignorant or unheedful of sound hygiene, and glad to accept as sufficient the minimal requirements of the Board of Education. This country has little to be proud of in tolerating class-rooms which allow a floor space of only 10 square feet per child—less than is permitted by any other great nation. Everyone who cares for preventive medicine must agree with Dr. JAMES KERR, whose text-book we review on another page, that "it is time to give up the squalid ideals in relation to the elementary school-room." The moment may be wrong for the wholesale outlay of money on new buildings or on radical alterations of structure, but it is not wrong for the correction of definite nuisances and dangers to health, and measures to this end must take precedence of newer schemes, however picturesque and attractive. The whole position is disappointing. In his report for 1918 Sir WILLIAM HAMER said: "It may be assumed that a quarter of a million school-children in London are brought up in ignorance of, and without the possibility of, that minimum of attention to hygienic requirements which should now be necessary in every civilised community." The same holds good to-day, not only in London, but throughout the country, and the effects of school inspection and treatment are largely nullified by allowing inimical influences full play in the school-room.

[1] Report for 1925 of the Chief Medical Officer to the Board of Education. London: H.M. Stationery Office.

The teaching of elementary hygiene now has a place in the curriculum; but when the school conditions are such as have been described, the oral lesson is so much waste of time. NOEL PATON and LEONARD FINDLAY have recently shown that the greatest single factor in healthy childhood is efficiency of the mother. Legislation has delivered the future parents of the race into the hands of the State at an impressionable age, and though satisfactory education of their intellect may be impossible in our elementary schools for many years to come, the education of their bodies is practical politics—an ideal infinitely easier to realise. And personal health, often made possible by higher wages and easier conditions, will go far to promote the maternal efficiency which ought to give children of the next generation a better start. Such a start is profoundly important, but even though we cannot secure ideal homes for the children of to-day, we can at small cost ensure tolerably healthy school conditions and there instil, by example more than precept, the knowledge of much that is essential to health and happiness. From the psychological point of view good surroundings are as necessary as suitable and sufficient food, fresh air and sunlight, exercise and rest, and a child once accustomed to conditions that are bright, airy, clean, and wholesome will grow intolerant of what is mean, dirty, and squalid. In hundreds of schools, however, it is the mean, the dirty, and the squalid that are put before the children's eyes. Overcrowding leads to a loss of self-respect, prevents the development of individuality, encourages filth, vermin, and infectious or contagious diseases, and renders ventilation more difficult. Many schools are dirty. Little imagination and less science are shown in the dusting, brushing, and scrubbing that go on fitfully; the surroundings and the playground (if any) are often nothing more than patches of mud, much of which the children bring into school on their boots. The walls of rooms are made of bare brick, or have dull, rough surfaces; the rooms themselves are filled with old, unnecessary, dusty furniture, and decorated with uninspiring pictures. Even to-day there are practical exponents of the hot-air system of heating and ventilation; even to-day the draught and open window are unintelligently handled, lights are ill-placed, and windows grimy.

The present drop in the school population gives an excellent opportunity for closing structurally unsuitable schools and for bringing down the numbers of children in class-rooms. These measures would be a big step in the right direction. Improved cleanliness can be secured by supervising the work of caretakers and cleaners, and by removing useless furniture or impedimenta; walls should be made smooth and painted in flat colours—bright, but not glaring—so as to be readily washed, whilst floors may be treated with dust-allaying oil. The formation of smaller classes lessens the difficulty of ventilation; the children respond better to discipline, and desks can be spaced to meet the need for light and air. Heating and ventilation in schools admittedly present difficult problems, requiring much careful thought, but there are few systems in existence—however inefficient in themselves—that could not be better, and probably more economically, run if a little more intelligent supervision were given to them. To hold open-air classes does not necessarily require much ingenuity or special provision; the shed in the playground may give ample protection even in cold weather, and simple exercises at intervals not only keep up the necessary heat, but bring about adequate adaptation in the

whole mechanism of the child. Perhaps the gravest leakage of heat occurs through sodden footwear, which many children have to wear throughout the day during wet weather. As a source of debility this is probably of great importance, yet the provision of simple slippers—which can be made by senior girls at little expense and with some educational benefit—is the exception in most school areas. The midday hour, especially in country districts, may well be utilised in giving the children a hot meal. It is sometimes possible to use the opportunity for teaching plain cookery and dietetic principles to the bigger girls, and if efficiently supervised, a meal can be made into an occasion for imparting cleanly and orderly table habits. Again, the play instinct of children largely determines their growth, so that the lack or unsuitability of playground accommodation cries out for immediate reform. Washing arrangements —for the most part inadequate—now exist in most schools, but often the water will be found to be turned off, "as the children make such a mess." One, or perhaps two, roller towels are used for the removal of dirt both from sweating or perhaps hastily soused hands and faces, and from boots. There is no need to refer to septic conditions of the skin, nose, mouth, ears, and eyes. It is not enough to have wash basins; there must be soap, preferably in receptacles from which only a small quantity can be taken at one time. Paper towels are satisfactory and not expensive, in view of their advantages. Some responsible person should always be present during the times of ablution. Erection of spray or shower baths may be somewhat expensive, but in the long run it is cheaper than the present involved system of compulsory cleansing, and the moral value is beyond calculation. Swimming baths are a luxury, excellent as they are. As for the condition of sanitary conveniences, that is something that must be faced before any pretence is made to inculcate the principles of hygiene. Till these abuses are dealt with there is little need to consider the broader aspects of structural alteration, building sites, exposure, and surroundings; but enough has been said to show the immediate necessity for public bodies, educationists, and medical men to make further efforts to improve the conditions of elementary schools.

EXPERIMENTS ON ANIMALS.

A CHARGE of alleged dog-stealing led recently to the conviction of a dealer who has supplied animals to the University College School of Physiology; the episode has been followed by prompt inquiry on the part of the authorities, by whom an official statement has now been issued. The episode has raised questions concerning the most satisfactory method of securing an adequate supply of animals for the purpose of research. Presumably it would not be impossible for the Medical Research Council to undertake the breeding of those required, though there is potential material already in existence. In a letter to the *Times* Prof. A. V. HILL has pointed out that over 50,000 stray, homeless, and unwanted dogs are annually sent to the lethal chamber, and the diversion of some of these to the service of scientific research would solve the problem simply and sensibly. But though this solution of the difficulty is adopted in America and elsewhere, in England it is barred by the law. In 1906 Parliament passed a Dogs Act, concerned with divers matters such as the liability of dog-owners for injury to cattle, the compulsory dog-collar, and the exemption of sheep-dogs from licence duty. One section of this measure dealt with the seizure and detention of stray dogs and their destruction by the police, if unclaimed, after a proper interval and after due notification to the owner, a register being kept with a brief description of every dog thus seized and detained. The humanitarian zeal shown by some propagandists, and the distrust of medicine shown by others, procured the insertion of a sub-section (Section 3, Subsection 5) enacting that "no dog so seized shall be given or sold for the purpose of vivisection." This clause, Prof. HILL suggests, should be repealed, but we fear that the attempt to do so would rally once more those who have supported the kindly but narrow views of the promoters of a series of Dogs' Protection Bills.

There are as many dog-lovers in the medical profession as in any other. We shall all agree that experiments upon dogs and cats should be restricted to the minimum. There would probably be scant professional opposition to a regulation that these animals should not be used for demonstrating to students accepted observations which need no further confirmation, but that is a very different thing from enacting by law that no canine subjects should be employed in any capacity for medical research. The reasons for using the dog for experiments devoted to the diminution of human and animal pain were fully and fairly stated in the memorandum[1] issued by the Medical Research Committee in 1919. It was there shown how such experiments had led to the prevention of disease and suffering in matters such as rickets, disorders of the teeth, the effects of alcohol and diseases of the heart, and how much the experiments had contributed to our knowledge of blood circulation. It is probable that some who are ready to take a prominent part in what they consider to be a defence of the dog have never studied this document, which should be supplemented by Dr. C. H. BEST'S letter on p. 1192 in the matter of insulin research, while many who now assume that all experiments classed as vivisection necessarily involve disregard of pain do not read the Inspector's reports prefixed to the annual Home Office return under the Act of 1876. That Act makes animal experiments legal, subject to an elaborate system of licensing, regulation, and inspection. Inspecting officers pay frequent visits, usually without previous notice, to all places registered for experiment. In the latest report, that for 1925, the inspectors found all animals suitably lodged and well cared for, and the licensees generally attentive to the requirements of the Act and the conditions attached by the Home Office to their licences. They report only two cases of irregularity in the year. One of these was the unlicensed immersion of trout in polluted water under a misunderstanding of the scope of the Act; immediate steps were taken by the offender to obtain a licence and the appropriate certificate. The other irregularity concerned certain simple inoculations made in the case of cats; the inoculator held Certificate A but not Certificate E; it was clear that he had erred unwittingly, and it was considered sufficient to admonish him. The importance of the report is that it shows how large a proportion of experiments are painless, and how great is the care taken to prevent the suffering of pain.

However reassuring an Inspector's report may be, there will still be dog-lovers who look upon every research worker as a ghoul, while forgetting that veterinary medicine owes a debt to medical research. Mr. STEPHEN COLERIDGE inserts in a letter to the *Times* the observation that "it is, of course, idle to

[1] THE LANCET, 1919, i., 947.

expect from a man of science any consideration of pity for vivisected dogs "—it is idle to expect from Mr. COLERIDGE reflections of any other character. A discovery of modern science—the use of insulin in cases of diabetes—has been made by means of experiments upon dogs, and to make this discovery fit into the contention that vivisection is unjustified by results, Mr. COLERIDGE must deny that insulin is a successful remedy. He does so, and he adduces figures from the returns of the Registrar-General in support of his denial. Here, at any rate, is a definite issue of fact upon which medical science can meet him confidently. The reply by Prof. T. R. ELLIOTT and Sir WALTER FLETCHER, restating matters within the knowledge of every medical practitioner, deserves the widest possible publication. The records of hospital patients treated with insulin show the vast misery that has been saved by the discovery.

SMALL-POX IN THE NORTH.

SMALL-POX having failed in recent times to make itself felt as a fatal disease is now clogging the machinery of local government by its mere abundance. In the last Weekly Return there were 353 cases, all except 17 notified from counties north of the Dee and Humber, and 288 of them from the small county of Durham. Middlesbrough was the first scene of this northern outbreak; it was introduced there by a visitor in 1920, and up to the middle of 1925, when it rapidly diminished, about 1800 cases had been reported, all of conspicuously mild type. In the previous Middlesbrough epidemic of 1897–98 Dr. CHARLES DINGLE, medical officer of health, had to report[1] a third fewer cases, but attended with 166 deaths, and (in contrast with the Gloucester epidemic) the outbreak was only with difficulty got under control. In the recent epidemic Dr. DINGLE strove manfully to stem the tide, but receiving little or no support from his sanitary authority, he regarded it as hopeless to obtain immunity by vaccination, and accepted[2] the second-best plan of letting the population obtain immunity by contracting the disease in this mild form. Only an occasional case is now appearing in this town of 136,000 inhabitants.

The next serious outbreak was in Ashington, mid-Northumberland, where 500 cases occurred in two years in a colliery population of about 30,000. Here the sanitary authority, having no small-pox hospital, fell back on the isolation hospital, described[3] by Sir GEORGE NEWMAN as not at all suitable for the purpose. Friends and relations were permitted to visit patients at this hospital without proper precaution against the spread of infection, with the result that much inconvenience and loss of wages occurred locally, and infection spread to other areas. The part-time M.O.H. was not in a position to meet such a public health crisis in an intensely antivaccinist population, with a sanitary authority which strenuously opposed any efforts to get contacts vaccinated. Finally, notified cases seem to have been left at home with little or no supervision. The position at Ashington has since changed for the better with the appointment of a new medical officer, still a part-timer. The next outbreak occurred at Newburn, a colliery and iron-working district on the extreme western boundary of Newcastle, and gave an anxious time to the medical staff of that county borough. Here the outbreak was regarded, not as small-pox, but as a mild inoffensive disease, probably chicken-pox, and in the great majority of cases notified as small-pox no action of any kind was taken. Most of the cases of small-pox that occurred in Newcastle were traced directly to infection from Newburn; but each of the numerous outbreaks in the city remained restricted to one or two cases at most, showing how readily the disease is controlled when handled efficiently. During the past summer the disease crossed the Tyne, and outbreaks began to appear in the county of Durham, where the C.M.O. took a very active part in assisting and advising the district medical officers. Unlike Northumberland, Durham is a very densely populated county, and the result of mismanagement would be seen in thousands rather than hundreds of cases. Three members of Dr. EUSTACE HILL'S health committee, who criticised his drastic action at one meeting, were absent from the next, being themselves confined to hospital with small-pox. It is noteworthy that in none of the towns on Tyneside has the disease got any real hold, because it has been grappled with from the start.

In Gateshead a considerable number of cases were discovered by the M.O.H. in a very thorough house-to-house investigation of some streets from which one or two cases had been reported. In Newcastle, where the cases have never exceeded an occasional one, two, or three a week, the population is relatively well vaccinated, this measure having been pushed quietly and unostentatiously during the past year or two. Infantile vaccination in Newcastle approaches 70 per cent. But Newcastle has stood by its neighbours, and at the present moment is housing 30 or 40 cases from the Brandon district of Durham, where existing accommodation is overtaxed, and cases have been sent to Sealburn, Blacksell, and Shincliff, and even to Middlesbrough, while the suitability of Brancepeth Castle as a temporary hospital is being canvassed. In spite of all this costly inconvenience the vaccination centres are only sparsely visited. Contrast with this the extraordinary freedom of London from small-pox. At a recent meeting of the County Council, Mr. G. H. WALMSLEY, chairman of the Public Health Committee, said that during the years 1923-25 there had been 25 cases of small-pox reported in London, as compared with 11,630 in the rest of England and Wales. This he justly ascribed to the energetic action of public authorities in London in following up and vaccinating contacts, combined with the facilities for prompt diagnosis provided by the Council, and the close coöperation between all the medical officers concerned.

[1] THE LANCET, 1898, i., 1104.
[2] Jour. Roy. San. Inst., April, 1926.
[3] Annual Report of C.M.O. of Ministry of Health for 1925, p. 36.

IT is a hundred years since the death of the illustrious Laënnec, and it is also exactly a hundred years since the second edition of his masterly work, the "Traité d'auscultation," was published. The Paris Academy of Medicine has taken the initiative in celebrating this double anniversary by a series of meetings on Dec. 13th, 14th, and 15th. On Monday, Dec. 13th, there will be an afternoon reception at the Académie de Médecine and the Hôtel de Ville, followed by a reception at the Sorbonne in the presence of the President of the Republic, at which addresses will be given by the Rector, Prof. P. Ménétrier and by Prof. A. d'Arsonval, Prof. H. Roger, and Prof. Léon Bernard. The foreign delegates will also speak. On the following day there will be a morning visit to the Musée Carnavalet and in the afternoon Prof. P. J. Bar, Prof. G. C. Mirallie, Prof. M. Letulle, Prof. E. Sergent and Prof. C. Achard will deliver addresses at the Academy of Medicine on different aspects of Laënnec's work. There will also be an exhibition of souvenirs. For Wednesday, Dec. 15th, the arrangements include a reception at the Hôpital Laënnec and an address by Dr. Rist, followed by visits to the Hôpital Necker and the Hôpital de la Charité. In the afternoon, during a visit to the Institut Pasteur, there will be an address by Prof. A. Calmette on Prevention of Tuberculosis since the Days of Laënnec. The fêtes will close with a banquet the same evening at the Palais d'Orsay. All who wish to join in these interesting ceremonies should communicate with the Secretary-General, Prof. A. Roussy, 21, Rue de l'École de Médecine, Paris, 6. We understand that the Royal College of Physicians will be represented by Sir John Broadbent and the Royal Society of Medicine by Sir StClair Thomson.

Annotations.

"Ne quid nimis."

THE RECOGNITION OF THE FAILING HEART.

THE word "cure" is hardly applicable to heart disease. We can relieve symptoms and improve the functional efficiency of the diseased organ, and we can look forward to the day when we shall be able to prevent heart disease, but a heart once damaged is permanently damaged, and can never be restored to its normal condition. The importance of early diagnosis is paramount, in order that we may be in a position to arrest the progress of disease before it is too late, and while the heart is still capable of meeting the demands of a life of moderate activity. In his Morrison lectures[1] delivered before the Royal College of Physicians of Edinburgh, Dr. John Cowan discusses the evidence on which such early diagnosis must be based. In most forms of chronic disease disturbance of function can be recognised long before the appearance of objective signs resulting from structural changes in the diseased organ, and nowhere is this more true than in the case of the heart. Dr. Cowan rightly emphasises the fact that the earliest sign of impending heart failure is impairment of the tolerance for exercise. It is surprising that in framing a prognosis, the importance of making a careful study of the heart's functional capacity does not appear to be more generally recognised. Despite the teaching of the past quarter of a century and more, despite the overwhelming evidence to the contrary afforded by the examination of hundreds of healthy young men during the war, it still happens that people with perfectly normal hearts are told they are suffering from heart disease because of the discovery of a systolic murmur or of occasional intermissions in the radial pulse due to ventricular extrasystoles.

Broadly speaking, there are two methods of estimating the heart's functional capacity. The one is to ascertain by careful inquiry whether symptoms of distress are produced by a degree of exertion which previously was well tolerated. A progressive diminution in cardiac response, no matter how trivial it may appear to the patient, provided it cannot be accounted for by other causes, is always suggestive of the approach of myocardial insufficiency. Allowance must be made for advancing years, and it is not uncommon for a man who retains his mental vigour to be unwilling to recognise the natural impairment of his physical capacity. The common tendency is for patients to make light of, rather than to exaggerate, the severity of their symptoms, the result, perhaps, of an inherent optimism or of the insidious onset of the disability. In many cases the history alone suffices to clinch the diagnosis, but at times it is desirable to supplement it by physical tests, which must, of course, be appropriate to the physique and age of the patient. They should, so far as possible, conform to the type of muscular activity to which the patient is habituated, and for this purpose there is none more universally applicable than the ascent of a flight of stairs. Even such a simple movement as raising the body with one foot on a chair is less trustworthy, for it introduces the factor of balance and the use of less-trained muscles. It is not only the form of the test which is of importance in the assessment of the heart's physical capacity, but also the criteria adopted in assessing the result of the test. Attempts have been made to obtain a numerical expression of the heart's efficiency, and probably the one which has gained most general acceptance is the increase in heart rate following a standard exercise, compared with the resting rate two minutes after cessation of the exercise. This is a rough guide but in no way fulfils the requirements of a truly quantitative test. Reliance should be placed rather on the severity of symptoms such as breathlessness, precordial discomfort, or dizziness induced by the exercise.

Dr. Cowan calls attention to the ominous significance of progressive changes in the physical signs, such as gradually increasing cardiac enlargement, impure heart sounds which subsequently give place to definite murmurs, and the earliest appearance of traces of œdema in the ankles and congestion of the internal organs. Similarly, a progressive fall in systolic blood pressure is a sure sign of myocardial failure. The systolic arterial pressure is a measure of the heart's capacity to meet its liabilities, and should bear a quantitative relation to the diastolic pressure, but as the heart finds it more and more difficult to carry on, the systolic and diastolic values tend to approach one another. Additional evidence of myocardial failure is sometimes afforded by the electrocardiogram. For example, bundle branch block already has an established place in prognosis, but there are other changes of a similar nature associated with the onset of failure, the significance of which is not yet fully understood.

[1] Edin. Med. Jour., 1926, xxxiii., 465 and 533.

RADIOTHERAPY IN GERMANY.

RADIATION therapy has passed through phases and fashions inseparable from the development of a new and important therapeutic agent. The old empiricism gave place to a new dogmatism. To-day there is a general disposition to return to older methods, but with this difference, that we need never go back to slipshod ways, for radiotherapeutics have become enriched by a wealth of technical resources and a harvest of clinical and biological knowledge. Its future lies in the application of these principles to properly selected cases. Towards that end the labours of our German colleagues are contributing in generous measure. The favourable impression given by the first volume of a comprehensive work on radiotherapy published in three parts during the last two years is fully sustained by the second and third volumes, dealing with the clinical aspect, special technique, and results of radiation therapy.[1] Surgery is divided into technical and clinical sections. For the convenience of surgical specialists without special radiological training, the essentials of physics are first summarised in an elementary article (Baerwald). Technique and biology are dealt with in the same introductory fashion (Rapp). Holfelder follows with a more detailed chapter on special technique, which includes a description of his "field selector," and contains a number of practical hints based on his personal methods. The technical section is completed by Rapp, discussing radioactive bodies. Its inclusion involves some repetition, as the ground was more fully covered in Vol. I., but gives completeness to a volume which is intended for the surgeon as well as for the radiologist. The clinical section contains some 80 pages on Carcinoma and Sarcoma (Werner) and the remaining 340 pages deal with other surgical conditions. This proportion should be noted by those in whose minds radiotherapy connotes cancer treatment. Prof. Werner's article is conservative in tone, and appears to summarise the present trend of German opinion in relation to cancer treatment by X rays. He opposes the "cancer dose" theory of Seitz and Wintz, but does not entirely reject the theory of the "irritation dose." His views on choice of method and selection of cases are sound and helpful. As to results, he admits that radical cures are few and that results of radiation are far behind those of surgery. He makes a good point in insisting that we should, in a given case, decide at the outset whether a palliative or a radical result is to be aimed at, lest the possibility of a good palliative result be sacrificed, as it often is, through overtreatment. Heliotherapy in surgical tuberculosis receives due attention. The photographs on pages

[1] Lehrbuch der Strahlentherapie. Edited by Prof. Hans Meyer. Berlin: Urban and Schwarzenberg. Vol. II. (Surgery). 1925. With 284 illustrations. Pp. 702. Vol. III. (Medicine). 1926. With 172 illustrations. Pp. 884. Price per vol., M.45

302 and 321 showing results in extreme cases are good propaganda, but that on page 322 appears to carry this to undue lengths. It represents an emaciated boy grotesquely mutilated by amputation, and bears the title "Example of the surgical treatment formerly employed in surgical tuberculosis." Jüngling emphasises the value of X rays in tuberculosis of bones and joints. Small doses, exact technique, and wise selection of cases, combined with good clinical judgment, are necessary to success. Holfelder treats of a miscellany of other surgical conditions. Interesting chapters on Radiation in Ophthalmology and Rhinology together with a section on Surgical Diathermy, complete the volume. Vol. III. is devoted to medicine. In a vigorous article, Pordes (Vienna) gives expression to the spirit of revolt against the too rigid technicalities in which X ray therapy has become involved. He charges the technician and the physicist with making incursions into the realm of biology, and of simplifying the monstrous complexity of biological processes to the point where they can be crammed into the rigid confines of a mathematical formula or of a regular curve; the physician who uses radiological treatment as an elastic therapeutic agent is unjustly regarded as guilty almost of malpraxis. Meanwhile, the patient's claims recede into the background, and the bewildered physician decides ultimately to work according to the scheme of school "X" or institute "Y," or even merely to follow the instructions given away at the time of purchase with apparatus "Z"! Pordes then applies himself to reconsidering the observed facts, and writes in a stimulating and commonsense vein. Other articles of special interest include Blood Diseases (Holthusen), Mediastinal Tumours (Kienbock), Pituitary Tumours (Kupferle), Malignant Diseases of the Thyroid (Haenisch), to name only a few. The special section on Diseases of Children is useful. The article on Graves's Disease is in the nature of a compilation, a defect from which the work, as a whole, is singularly free. We infer from this article that the bulk of evidence strongly opposes the often-repeated statement that X ray treatment seriously hampers surgical removal of the thyroid gland. This risk appears to have been exaggerated. Nearly all the articles have good case reports; statistical information as regards results is, for the most part, lacking. The indices to the separate volumes are excellent, and with the "contents tables" make reference to any special subject easy. The bibliographies are exhaustive. This text-book as a whole is one of the best and most complete works on the subject we have yet seen, and the editor and his collaborators deserve the highest praise.

RECURRENT IRITIS.

OPHTHALMOLOGISTS now regard recurrent iritis as generally due to metastasis from a focal infection and its radical cure as dependent on the removal of the source of infection. Acting on this idea, Drs. E. E. Irons and E. V. L. Brown reported two series of 100 cases each in 1916 and 1923 in which careful studies of each patient were made to determine what kinds of infection were present. The sources of infection were removed so far as possible and the effect on the eyes noted. They have now presented a report to the American Medical Association summarising the first 50 cases from which they have been able to obtain reports with reference to recurrence.[1] In 43 of these 50 cases there was no recurrence of iritis after a period of observation of from three to 12 years. In the remaining seven recurrence had taken place. In the former (non-recurrent) group the ætiology, in more than half the cases, was ascribed either to the teeth or the tonsils and removal of the source was a comparatively simple matter. In the small recurrent group more than half were ascribed to either syphilis, gonorrhœa, or tubercle. This affords prima facie evidence in favour of the author's theory of causation being correct. In one dental case, for instance, in which there had been 12 previous attacks there was none for four years after the removal of the teeth, and in one tonsillar case in which there had been three previous attacks there had been no recurrence nine years after removal of the tonsils. It cannot, however, be claimed that treatment on these lines is always infallible or sufficient. In one case attributed to the tonsils in which there had been 21 previous attacks there was no recurrence for three years in spite of the tonsils having been left in, and in another similar case where there had been three previous attacks no recurrence for four years. As was remarked in the discussion the hygienic treatment which the patient receives has also its effect. Of other sources of infection Dr. W. Zentmayer emphasised the importance of the prostate and said that infection from this source is probably more often non-gonococcal than gonococcal. It should be added that in the case of gonorrhœa routine treatment of the prostate during the acute stage is apt to aggravate the ocular inflammation. Another source of focal infection was suggested by Dr. Lloyd Mills, of Los Angeles, in whose experience a large proportion of cases of chronic ocular inflammation are found associated with heavy intestinal infections of protozoa and flagellates of proved tissue-invasive capacity and nearly always with an accompanying chronic colitis. Effective treatment directed to the cure of this condition has, according to him, had most encouraging results. The day is past when all cases of iritis were said to be either syphilitic or "rheumatic," and though a more scientific diagnosis may not always be easy, we now know the direction in which to look for it.

[1] Jour. Amer. Med. Assoc., Oct. 6th, 1926.

AMPUTATIONS AND ARTIFICIAL LIMBS.

IN an annotation on the adjustment of artificial limbs in our issue of Nov. 20th we commented upon the need of closer coöperation between operating surgeons and limb-makers. In a letter from Mr. Muirhead Little, which we publish to-day, he draws attention to another aspect of the question of the supply of artificial limbs to hospital patients. It is no reproach to the operating surgeon to say that, unless by chance he has had orthopædic experience, he will not want to instruct in details the limb-maker, with whom he, in present circumstances, seldom comes into contact. How many surgeons, having performed amputations of the thigh and seen the flaps soundly united, have opportunities to consider whether movement of the hip-joint is free and unrestrained? Yet it very often happens that there is contracture limiting flexion and such contracture, if of more than a slight degree, is fatal to free and comfortable locomotion on an artificial limb. A patient in such a condition may be sent to a limb-maker to be fitted, and although the socket supplied may accurately fit the stump, he finds that he cannot use the limb. The limb-maker may or may not realise what is the matter, and if he does, he may hesitate, on his own initiative, to send the case back to the surgeon with an intimation which in effect would mean that the latter had not done his work completely. Fifteen years ago there was a measure of excuse for all this, for amputations were few, and seemed to be becoming fewer; but since the great increase of motor-car accidents their number has much increased, and the subject of prosthetics has become proportionately more important. The British limb-making firms are second to none in skill, and are animated by the desire to do the best for their customers; at present their work is apt to go uncriticised, but honest criticism is absolutely necessary to efficiency, let alone progress. There is now in existence a first-rate institution—The Surgical Supply Depôt, Kensington—where among other things excellent provisional peg-legs or pylons are made, of which more use might be made in hospital practice than is at present done. We feel that a similar institution for the supply of permanent artificial limbs might be established under surgical supervision, with the coöperation of all the

metropolitan general hospitals. Opportunities for meeting the demand for artificial limbs at such an establishment would be open to all limb-makers, while the prescription and the approval of the limbs supplied would be in the hands of surgeons with special experience, They would supervise the training of the amputees in the use of the appliances, and discuss with the manufacturers both the limb to be made and any subsequent modifications that seemed needful.

CYCLIC VOMITING.

THERE can be few questions on which current opinion is in so fluid a state as on the ætiology of recurrent paroxysmal attacks of vomiting. The so-called cyclic vomiting of children and the "pernicious" vomiting of pregnancy are both *associated* with ketosis, and a generation of students has learnt to describe them as "due to acidosis." Marfan even gave the name "acetonæmic" vomiting to the recurrent attacks in childhood. A further question followed naturally on this explanation: What is the cause of the acidosis? Some have answered this question by positing an inherent intolerance to fats, and treat the condition by prescribing a diet in which fat is rigidly restricted. That ketosis is the *cause* of these conditions is perhaps still to a certain extent the conventional view, but in recent years it has been freely questioned, and the number of those who are convinced of it is probably rather small. A few years ago the causal connexion between ketosis and the vomiting of pregnancy was challenged, and support was given to the existence of psychogenic factors in the ætiology. A number of pediatrists have expressed a similar scepticism about the causation of cyclic vomiting. Prof. J. L. Morse, of Harvard, has recently dismissed it as a popular fallacy, and it has been the experience of many who are engaged in the treatment of children that the attacks of vomiting are generally associated with some dietetic defect—not by any means always an excess of fat—and respond to the correction of the defect, whatever it may be, without any particular restriction of the fat in the diet. Other cases occur in which the toxic element is small, and which present no fundamental distinction from the clinical picture of migraine. Doubt as to the adequacy of the ketosis theory opened the way for rival suggestions, of which there have been many. Chronic appendicitis has been put forward, particularly in America, as a common cause, and success has been claimed for the results of appendicectomy. Prof. L. T. LeWald, of New York,[1] has investigated a large number of these children radiologically, and gives the results of an analysis of 44 cases. He found some abnormality in a part of the intestinal tract in the majority of cases, but considered that no one condition was so constantly present as to suggest a true cause. Abnormal length of the colon was his most frequent finding, being present in 35 cases, while "dilated ptosed stomach" was found in 23 cases. The two conditions were often present together. Of the individual cases which he describes, one, associated with headache and strabismus and cured by operative correction of the latter, may well be classed as migraine. Another case, with redundant colon, obtained no relief from appendicectomy but was subsequently improved by a suitable abdominal belt. A third, previously attributed to acidosis, was found to have a severe degree of pylorospasm. Prof. LeWald concludes that cyclic vomiting is probably of reflex nature and is usualy associated with abnormalities of some portion of the digestive tract. The questions of whether these abnormalities are mainly congenital or acquired, and to what extent they are responsible for the symptoms, are not discussed, but raise some points of interest. His other conclusion, that "cyclic vomiting is not an entity, and has no specific cause" is perhaps the most accurate representation of the ætiology which can be given, and is one which will discourage the adoption of any stereotyped line of treatment.

[1] Radiology, November, 1926.

THE BRITISH SOCIAL HYGIENE COUNCIL.

IT will be remembered that a short time ago the National Council for Combating Venereal Disease changed its name to the British Social Hygiene Council and widened the scope of its work. There was a certain amount of opposition to a change of policy involving coöperation with local authorities in general health propaganda, but the report for the year 1925–26, which has just been issued, shows that fears of the direct work of the Council against venereal disease being reduced have not been justified by the event. Owing to pressure of work Sir Auckland Geddes has resigned from the presidency of the Council; Lord Willingdon has been elected in his place, which is especially appropriate, as the Council is shortly sending a delegation to India. The members of this delegation will be Dr. David Lees, of Edinburgh, Mrs. Neville Rolfe, secretary-general of the Council, and a secretary; expenses are being met by a voluntary fund raised in India, and invitations have been received from the governments of the chief provinces. The Council's work abroad, especially in the Dominions and Colonies, is well recognised, as was shown by the interest aroused by the Imperial Social Hygiene Congress held at Wembley last year, whilst its work at home continues to be of great importance. In particular the new programme of education demands notice. In presenting the principles of social hygiene to the public it became obvious that a definite statement on sexual continence was necessary. A committee consulted various authorities, and in March last the Council published the following:—

"The British Social Hygiene Council are of the opinion that: (1) In the interests of the race and of the individual it is essential that the stability of the family in marriage should be preserved, and social habits and customs should be adjusted to this end. (2) There is overwhelming evidence that irregular sex relations, whether in married or unmarried, lead to physical, mental, and moral harm. (3) There is no evidence either from physiology or from experience that for the unmarried sexual intercourse is a necessity for the maintenance of physical health. (4) There is no evidence either from psychology or from experience that for the unmarried sexual intercourse is a necessity for the maintenance of mental health."

This pronouncement has formed a basis for addresses delivered last year by Prof. J. Arthur Thomson, Dr. William Brown, and Prof. Julian Huxley under the ægis of universities, local authorities, and branches at 21 different towns. A medical film on the manifestations, diagnosis, and treatment of syphilis is now almost ready, and the first six sections are available for use in medical schools and by post-graduate associations. Especial effort is to be directed during the coming year to the relation between mental deficiency and the spread of venereal disease, and to the checking of congenital syphilis. The medical committee of the Council urges the need for antenatal work and the treatment of infected women during pregnancy.

SILKWORM DISEASE.

PEBRINE began to make itself felt in the French silk industry in the 'fifties of last century. For a time the cultivators kept going by importing clean eggs from uninfected districts, and, indeed, reached their maximum production (26 million kilos of cocoons) in 1853. Despite all their efforts, however, the yield steadily fell after that until in 1865 only some 4 million kilos were obtained. Various individuals and commissions examined the matter, and Cornalia described the corpuscles which are now known as *Nosema bombycis*, but nothing was achieved towards the practical suppression of the disease. It is said that Pasteur, when he was asked by Dumas in 1865 to see what he could do, did not know that a caterpillar turned into a chrysalis and a chrysalis into a moth. That pebrine is now a thing of the past is sufficient evidence that this sort of ignorance does not matter very much to a man with a flair for experimental inquiry and a belief in the efficacy of microbes in causing disease. All Pasteur's writings

on silkworm diseases are collected in a noble volume,[1] the fourth of his collected works, by the pious care of Dr. Vallery-Radot. Three more volumes are promised, and the whole collection will form a splendid monument. The reproduction of the originals is, as far as a few test pieces go, meticulously correct, and the only thing we regret is that no footnotes or running commentary has been added to show the present state of the various hares that Pasteur started. Classical texts are edifying enough, but for those who have little knowledge of the subjects dealt with they are all the better for prolegomena, notes, and appendices.

ETHYLENE ANÆSTHESIA.

ETHYLENE has only been in use, at all commonly, for three years and it may be still too early for a confident pronouncement on its exact place among available anæsthetics. Nevertheless, there are certain advantages and certain defects which are already so clear that the permanent value of this drug may be fairly gauged. For major operations, where complete muscular relaxation is required, it is obviously not in the same class as ether. On the other hand, it is more potent than nitrous oxide and can be used effectively with higher proportions of oxygen, which makes it a valuable aid where a patient is very feeble or ill. It is, in fact, for short operations on this type of person that ethylene is likely to be chiefly employed. The after-effects are slight, but so also are those of nitrous oxide and oxygen in similar cases. A writer in *Surgery, Gynecology, and Obstetrics* for November advances the claims of ethylene over "gas and oxygen" from the point of view of safety. His premises, however, do not seem correct, for he refers to the danger of nitrous oxide and oxygen in unskilled hands—a danger that exists, no doubt—but to the safety of ethylene properly employed. The truth appears to be that both these anæsthetics are quite safe for short operations, but either of them may cause deaths during long administration. We gather from the article quoted that both chloroform and ether are viewed with greater disfavour on the other side of the Atlantic than they are here. It is just possible that through an eagerness for improvement anæsthetists in the United States have not sought or obtained from the older drugs the best that they can give.

A STUDY OF INCIDENCE OF ILLNESS.

A REPORT of the U.S. Public Health Service, dated Sept. 24th, 1926, contains a useful study of the incidence of sickness in the town of Haggerstown in Maryland during a period of 28 months. This town has a population of about 30,000, mostly white, and the investigation was limited to these. The study comprised some 1600 families selected for their representative character, and because of convenience for repeated visiting. After a preliminary visit, at which exact information was obtained, there followed 16 subsequent canvasses at intervals of from six to eight weeks. The data thus obtained as to illnesses which lasted at least three days are suggestive. Mr. Sydenstricker, statistician of the Public Health Service, gives the following as among the broad results obtained. An illness-rate of slightly more than one illness per person per year is indicated, the term illness being used as exclusive of attacks—for instance, of catarrh—which did not result in illness. This rate is about ten times as high as the rate for illnesses causing absences from work for eight days or longer among adult male industrial workers in a group of American industries. Nor is this surprising in view of the fact that the Haggerstown statistics include young children and aged people, as well as adults of intermediate ages. As in the English statistics of medical work under the National (Health) Insurance Acts, it is striking how low is the position occupied by tuberculosis, cancer, cardiac diseases, and renal diseases in the causes of illness during the 28 months' observation. The inference is drawn that these serious causes of mortality are actually less frequent as causes of illness than the illnesses which most of us at intervals experience. This conclusion needs tempering, of course, by consideration of the extensive treatment of these more serious illnesses in hospitals and infirmaries. Colds and bronchitis caused illness in 419 per 1000 persons in the group under observation; influenza and "grippe" in 143, digestive diseases 95, tonsillitis and sore-throat 65, puerperal conditions 46, accidents 40; the numbers under other headings becoming smaller and smaller, until we reach the lowest point of the scale, where appear pneumonia with 7, diphtheria, scarlet fever, and typhoid (aggregate) 6, hay fever and asthma 5 cases per 1000 persons. That death-rates are not a suitable index of illness is shown by the fact that in Haggerstown only 20 per cent. of the mortality, but 61 per cent. of the illnesses were due to respiratory diseases. Mr. Sydenstricker's report contains other observations worthy of note, and these are to be the subject of further study.

RESEARCH IN CLINICAL PSYCHIATRY.

AT the quarterly meeting of the Royal Medico-Psychological Society held at the Horton Mental Hospital, Epsom, on Nov. 16th, a resolution was put calling for the institution of a preliminary Research and Clinical Psychiatry Committee. In a letter circulated to the members of the Association prior to this meeting, the President, Lieut.-Colonel J. R. Lord, expressed the view that such a committee should be composed mainly of medical officers actually engaged in research and higher scientific psychiatry, with the addition of representative teachers in psychiatry, clinicians of note and standing, psychologists, sociologists, and some interested in statistics. The committee, he thought, should be a large one to permit of good attendances at meetings and the group consideration of sections of work such as ætiology, symptomatology, treatment, classification, records, and statistics. At the meeting the President was able to report an encouraging response to this letter, and the receipt of many helpful suggestions from members. He reiterated the view that every member should either have definite work to do for the Association or some direct interest in it. Resolutions were unanimously passed appointing a preliminary committee to prepare the way for the Standing Committee to be set up under the charter. Local authorities are being asked to afford facilities for the holding of divisional clinical meetings, to which local practitioners will be invited, and to encourage all assistant medical officers to attend these meetings.

POOR-LAW HOSPITAL EXTENSION AT LEEDS.—The Leeds board of guardians is considering the reorganisation of its hospital system. An extension of St. James's Hospital has just been opened and Dr. J. Dick, assistant medical superintendent of Fir Vale Hospital, Sheffield, has been appointed its medical superintendent and chief medical officer of the union. The guardians have also under their control two other hospitals at Bramley and Rothwell respectively. It is proposed so to enlarge that at Bramley that it will ultimately accommodate from 800 to 900 patients and become a training school of the same type as St. James's. The arrangements at St. James's for visits by consultants are to be extended, and it is intended that there shall be two visiting surgeons, three visiting physicians, a gynæcologist, an aural surgeon, and an ophthalmic surgeon, and that the resident staff shall consist of six house surgeons and physicians who will work under the visiting surgeons. The latter will have their own patients, and will be at liberty to call in other consultants on agreed terms. It is further proposed to appoint a pathologist and bacteriologist, to set up a separate X ray department, and generally to develop the infirmary on the lines of a general hospital.

[1] Œuvres de Pasteur. Tome IV. Études sur la Maladie des vers à Soie. Collected by Dr. Pasteur Vallery-Radot. Paris: Masson and Co. 1926. Pp. 761. 16 plates. £1 3*s*. 4*d*.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CC.—THE TREATMENT OF CHILBLAIN (ERYTHEMA PERNIO).*

I.—General Considerations.

BEFORE discussing the pathogenesis of the actual lesion of chilblain it is convenient to consider the ætiology of the condition called "chilblain-circulation," acrocyanosis, or acroasphyxia, which is its usual accompaniment. It must however be recognised that chilblains may, rarely, occur in persons whose peripheral circulation is normally good, and conversely that a "chilblain-circulation" is not necessarily complicated by their development. Although patients liable to chilblains are not, as a rule, cases of Raynaud's disease, yet the latter often give a history of chilblains in childhood.

The Fat Subject of Acrocyanosis.

The subjects of acrocyanosis may roughly be divided into two types—the fat and the thin. The former is best exemplified by the blue-legged young woman, whose lower extremities have recently been the subject of some discussion in connexion with the wearing of silk stockings. This type is practically confined to the female sex, and presents the following clinical characteristics.

The patient is usually between the ages of 15 and 25, but the symptoms may persist until late middle age and may become accentuated at the menopause. She is fat, phlegmatic, and mentally often rather dull. The skin is harsh and dry on the extensor surfaces of the limbs, where there is also well-marked keratosis pilaris, particularly in the regions in which the cutaneous vascular stasis is most evident—viz., the posterior surface of the upper arms and the legs below the knees. Even in summer the peripheral vascular stasis can be recognised, especially in the lower halves of the legs, and in cold, damp weather it reaches its maximum. The lower extremities show an increasing degree of cyanosis from the thighs downwards; above the knee there is livedo, below it there is a diffuse dilatation of the cutaneous vessels which is most evident on the lower postero-external surface. Here the skin is of a livid purple colour and icy cold to the touch. It is in this situation, where the vascular stasis is most marked, that the hypodermic nodules of Bazin's erythema induratum arise, should the patient have an active tuberculous focus with bacteriæmia, and it may be remarked that Bazin's disease is hardly ever met with except in patients of this type; apart from true erythema induratum chilblains may occur and give rise to a real difficulty in the differential diagnosis. Around the pilo-sebaceous follicles, the site, as has been said, of keratosis pilaris, are little blue rings of venous stasis, and the lanugo hairs are coarse and long. The skin is bound down to the subcutaneous fat and cannot be pinched up, and both it and the underlying tissue give the impression of being œdematous. Moreover, in severe cases there is actual œdema of the lower part of the legs, ankles, and feet, with pitting on pressure. To a less degree there is the same vascular stasis, with circumfollicular halos, keratosis pilaris, and sensation of œdema on the extensor surfaces of the upper arms. Livedo may be apparent on the forearms, and the hands are blue, cold, and often clammy; their dorsal surfaces and the fingers may be swollen and œdematous, and covered with chilblains of varying severity. In many of these patients there are menstrual irregularities; puberty is often retarded and the periods scanty and infrequent. This is not, however, constant.

The ætiological factors responsible for these characteristics must at present be regarded as uncertain and perhaps complex. The majority of patients are girls who live a sedentary indoor life and whose diet is lacking in fresh vitamin- and mineral-rich food, and it is probable that in the ætiology of the underlying endocrine disturbance, heredity, an unsuitable dietary, lack of fresh air and sunlight, and chronic septic absorption or intestinal toxæmia may all play a part.

The Thin Subject of Acrocyanosis.

To come now to the thin type of person with acrocyanosis, examples are met with in both sexes, and the symptoms may begin in early childhood—i.e., before puberty.

The patients are usually of a nervous and emotional temperament in contrast with the phlegmatic calm of the first type, and muscular hypotonus, with a resulting faulty stance and visceroptosis, is a characteristic feature. Loss of vasomotor tone is shown by a tendency to alternate pallor and flushing, by the coldness and blueness of the extremities, and by the static albuminuria sometimes found. This thin type, too, is more susceptible to infection, so that persistent nasopharyngeal catarrh, recurrent attacks of tonsillitis, and tuberculosis are common.

In childhood transient arthritis, endocarditis, and chorea, and in adult life chronic rheumatoid arthritis are found much more commonly in patients of the thin than of the fat type. The latter are also often subject to catarrh, and may develop tuberculosis of the lymphatic glands, in which case, as has been said, Bazin's erythema induratum is a likely complication, but their resistance to infection is undoubtedly greater. In other words, whereas liability to various infections is common to both, the constitutional disturbance is greater and permanent damage to certain organs and structures more likely to occur in the thin type.

The Hyposphyxial Syndrome.

Reference may here be made to the hyposphyxial syndrome or "hyposphyxia" of Alfred Martinet,[1] under which term the author gives an accurate clinical description, chiefly as regards the circulatory system, which applies to both the types differentiated above.

An appreciation of this hyposphyxial state is important because the sluggish circulation not only interferes seriously with the general tissue metabolism, but also predisposes to the development of cutaneous and other diseases when a chronic infection is present, since circulating bacteria may become embolised, and their toxins are more likely to produce inflammatory reactions, in situations where the vascular stasis is greatest.

Thus erythema induratum and papulo-necrotic tuberculide, which are respectively subcutaneous and cutaneous tuberculides, are seen only in hyposphyxial persons, and are due to the embolism of tubercle bacilli, carried in the blood stream from some distant tuberculous focus and coming to rest in a subcutaneous or dermic vessel. The hypodermic nodules, described by Dr. Whitfield as the non-tubercular form of erythema induratum and as occurring exclusively in middle-aged women suffering from chronic rheumatism, are similarly due to embolism of streptococci and, perhaps, other organisms.

Lupus erythematosus in its distribution affords a beautiful example of the localising influence of circulatory stasis in a chronic infection. The actual eruption may be due both to circulating toxins and to an actual bacteriæmia: its sites of election are the butterfly or flush area of the face, the ears, and the fingers, and its incidence in the last situation appears to be directly proportional to the degree of the coincident chilblain circulation.

The Actual Lesions in Chilblains.

The mechanism of the production of the actual lesion of chilblain is not altogether clear. There is presumably an initial contraction of the small arterioles and capillaries in response to the stimulus of cold, followed by a reactionary vasodilatation. This secondary vasodilatation appears to be accompanied by increased permeability of the vessel wall, with the result that serum, occasionally blood-stained, oozes into the tissues and produces a firm nodule of localised œdema over which the epidermis is stretched. Sometimes the exudation is so intense that an actual bulla is formed, the roof of which is constituted by the entire epidermis. In any case the latter is apt to be damaged, with the formation of a so-called "broken" chilblain. The ulcerated surface thus produced may become secondarily infected, and in severe cases there is considerable tissue-destruction with scar-formation. Not infrequently, if the chilblain condition of the skin persists, a thickening of the horny layer takes place and obstinate painful fissures result. Though usually discrete, chilblains may become confluent, and in the

* An article in this series on the Treatment of Chilblains—II. The Management of the Case, by Dr. Barber—will appear in THE LANCET next week.

[1] Presse Médicale, 1912, xx., 1064.

worst cases the fingers and even the whole hand may be swollen, œdematous, and covered with painful ulcers and fissures. Subjectively the lesions give rise to sensations of burning and intense irritation, causing the patient to scratch and deliberately relieve the tension by breaking through the distended epidermis.

Ætiology.—The ætiology of chilblain has already been partially dealt with in the above discussion on acrocyanosis, which is one of the most important predisposing factors. There are, however, several points which must be further considered. The influence of cold is obvious, and the combination of cold and damp is particularly noxious. Given, however, a feeble peripheral circulation, the question arises whether the mere physical action of cold alone on the local vasomotor mechanism is sufficient in itself to produce the lesions of chilblain, or whether cold acts by merely intensifying the vascular stasis already present. As has been pointed out by Dubreuilh and Petges,[2] there is a very close resemblance between chilblain and erythema induratum both anatomically (Audry [3]) and clinically. In fact, one might regard the latter as a subcutaneous chilblain just as the common form of erythema nodosum (in spite of assertions that have been made to the contrary) is undoubtedly the subcutaneous variety of erythema multiforme and angeioneurotic œdema a subcutaneous urticaria.

The suggestion, however, made chiefly by French writers, that chilblains should be considered as a superficial form of erythema induratum, and therefore as a tuberculide, cannot be accepted.

At the same time there is considerable clinical evidence that chilblains may actually be due to bacterial embolism or to the action of bacterial toxins on the cutaneous vessels, thus bringing them into line with erythema multiforme, erythema nodosum and induratum, and lupus erythematosus.

For example, a woman who suffered from Raynaud's disease, with early sclerodactyly, but who had never had chilblains, was operated on for appendicostomy; shortly after the operation an acute *Bacillus coli* infection developed with high temperature of the septicæmic type. In spite of the fact that she was, of course, completely at rest in bed, this febrile attack was accompanied by the appearance of large numbers of typical chilblains on the hands and feet. With the subsidence of the infection they disappeared and have never returned.

The influence of cold could not be invoked in this case, and one can but conclude that the chilblain lesions were produced by a bacteriæmia, with embolism in the cutaneous vessels, or, which is less likely, by the action of bacterial toxins.

Lastly the view, put forward by Sir Almroth Wright, that chilblains, urticaria, angeioneurotic œdema, and the so-called physiological albuminuria are due to lowered coagulability of the blood, which allows the transudation of plasma through the vessel walls and which is associated with a deficiency of calcium, must be referred to. It is responsible for the treatment of these conditions by the internal administration of calcium. Wright's view is certainly not universally applicable.

Dr. W. Payne has kindly estimated the total and ionisable calcium in a few young girls of the fat, acroasphyxial type. In none of them did the figures indicate calcium deficiency, and in some they were above normal. This corresponds with my clinical experience that chilblains in this type of patient are seldom relieved by calcium lactate, whereas the simultaneous administration of thyroid gland and large doses of iodine is usually of great value. On the other hand, calcium salts, parathyroid gland, and cod-liver oil are often very effective in the thin, hypotonic, scrofulous patient with acroasphyxia, not only in improving the general condition and resistance to infection, but also in lessening the tendency to chilblain.

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[2] Les engelures, Paris Médical, 1911, p. 330.
[3] Etude de la lésion de l'érythème induré de Bazin, Ann. de Dermat., 1898, p. 209.

Special Articles.

PARIS.

(FROM OUR OWN CORRESPONDENTS.)

The Treatment of Poliomyelitis by Irradiation and Diathermy.

IN 1911 Prof. L. Bordier, of Lyons, successfully treated a case of chronic anterior poliomyelitis (Aran-Duchenne type of progressive muscular atrophy) by the application of X rays to the cervical cord, and this led him to use radiotherapy for the treatment of acute poliomyelitis in children. His first results were published in 1921.[1]

During the first fortnight of an attack there is diffuse meningomyelitis of the spinal cord with œdema and hyperæmia. This leads on to atrophy of the motor cells of the anterior horn, and the result is paralysis and trophic disturbance in those muscles whose innervation corresponds to the affected neurons. Treatment with X rays is directed against the central cause of the paralysis, and it is claimed that irradiation diminishes œdema, reduces the small-celled infiltration, and promotes resolution of the inflammatory processes.[2] Experimentally and clinically it has been proved that the application of X rays to the spinal cord of young subjects is without danger.[3]

Radiotherapy, according to Prof. Bordier, ought to be started as soon as possible after the end of the febrile period. The exact site of the lesion can be discovered, if necessary, by testing the electrical reactions of the muscles, and X rays are then applied to the spinal cord at the appropriate level. The dosage needed is about 200 units R at a sitting; 600 R, or three units H, may be given during three successive irradiations, through a filter of 6 mm. of aluminium; and the operator makes use of either one or two ports of entry according to whether the paralysis is unilateral or bilateral. The direction of the beam of X rays ought to be perpendicular to the vertebral discs,[4] and the X ray tube and the patient are, therefore, arranged so that the angle between the principal plane of the tube and the sagittal plane of the body shall be 25 degrees (cervical region) or 30 degrees (dorso-lumbar region). After a course of treatment there is an interval of 25 days; two or three courses may be given according to the state of the patient.

The second therapeutic agent recommended by Prof. Bordier is diathermy of the muscles, which is intended to increase the blood-supply and temperature of the tissues, and thus promote better nutrition of the whole paralysed limb. Diathermy, he states, should be used from the beginning, independently of irradiation, and should be continued until the normal temperature of the limb permanently returns. It can be given daily, or at longer intervals. The technique is simple. A patient whose lower limb is to be treated is made to sit down on a metal electrode, and a second electrode is applied to the sole of his foot. The amount of current should be moderate, and the séance lasts about ten minutes.

Lastly, electrotherapy is valuable, as generally recognised, to restore the tone and function of paralysed or atrophied muscles. This is the third phase of treatment, and needs to be continued for a long time.

Since Bordier's combined method has been put forward it has given very encouraging results, both in his own hands[5] and in those of many others.[6] It has been criticised, of course, and he has replied

[1] Revue Médicale Française, January, 1921.
[2] Atti d. Soc. med.-chir. di Padova, Jan. 29th, 1926.
[3] Monde Médical, May 15th, 1925.
[4] Paris Médical, April 25th, 1925.
[5] Archives d'Elect. méd., October, 1925.
[6] Arch. de Méd. des Enfants, September, 1923. La Pediatria, Sept. 15th, 1924. Jour. Amer. Med. Assoc., June 7th, 1924. Atti d. Soc. méd.-chir. di Padova, Jan. 29th, 1926. Rev. di diag. y. trat. físicos, August, 1925, &c.

to the objections[3]; and his opinions have recently received experimental confirmation.[7] Though the treatment cannot at once cure the more serious cases, where there is a complete reaction of degeneration in many muscles, it considerably improves the prognosis and mitigates the consequences of the disease. In most cases of moderate gravity there is a favourable response, and in view of the unsatisfactory results of other methods, that put forward by Prof. Bordier appears well worth trial.

A Study of Suicide.

Under the direction of Prof. P. Toulouse, chief of the dispensary for mental prophylaxis, Dr. Suzanne Serin has just completed a study of suicide as occurring in Paris, and has examined 307 cases. The study shows that suicide is most frequent among males, aged persons, and the unmarried, and that, in spite of the large foreign population in Paris, suicide is limited almost wholly to the French. The main causes are psychopathic states, alcoholism, private cares, incurable disease, and poverty. One-third of the cases she regarded as of psychopathic origin, and half of these presented distinct mental abnormalities, including melancholia, dementia præcox, epilepsy, and traumatic psychoses; the other half showed defective mental balance in alcoholic or epileptic individuals, where suicide was not, she thought, directly related to the alcoholism or epilepsy. Another third of the cases proved directly due to alcoholism itself, apart from alcoholic mental affections. Prevention of suicide, says Dr. Serin, is most difficult in cases of poor mental equilibrium, for here suicide cannot be foreseen. Fairly effective prevention should be practicable in psychopathic cases through more careful organisation of mental dispensaries, clinics, and similar institutions.

The Centenary of Pinel.

Philippe Pinel died in 1826 at the age of 81, and the Academy of Medicine has been celebrating his centenary. Prof. Achard gave a masterly account of his life and works, referring especially to his "La médecine rendue plus précise et plus exacte par l'application de l'analyse (1802)" and his "Nosographie Philosophique," which was as a code of medicine for all his generation. Pinel spent most of his time in studying mental disorders, and wrote in 1809 a medico-philosophical treatise on insanity. To disorders of the understanding he tried to apply the same processes of reasoning as were used in ordinary medical practice, and he made great efforts to introduce more humanity into the conduct of asylums and to put an end to the fierce conflicts—far too common in those times—between attendants and patients. In the eyes of posterity this is perhaps his principal claim to glory.

Prof. Le Dentu.

One of the masters of French Surgery, Prof. J.-F.-A. Le Dentu, member of the Academy of Medicine and Commander of the Legion of Honour, has died in Paris at the age of 85. He was formerly surgeon to the Hôpital Necker and the Hôtel Dieu, and was professor of clinical surgery in the Faculty of Medicine from 1890 to 1908. He published a number of standard works on operative technique, and in collaboration with Delbet edited a treatise on Surgery in ten volumes.

The Argentine Republic has sent Prof. Enrique Feinmann to study French and Swiss clinics for the treatment of industrial accidents and diseases. He will also examine the organisation of European ministries of labour.

A centre for the re-education of the deaf has been opened by Dr. G. de Parrel at 78 boulevard Malesherbes, Paris.

On Nov. 6th the honorary degree of M.D. of the University of Paris was conferred on Dr. O. Medin, of Stockholm, especially known for his work on epidemic anterior poliomyelitis, and on Dr. C. Chagas, of Rio de Janeiro.

[7] Kraus: Zeit. f. d. gesamte phys. Ther., 1925.

BUCHAREST.

(FROM OUR OWN CORRESPONDENT.)

Strong Measures against Venereal Disease.

A GOVERNMENT Bill embodying the recommendations of many medical authorities is now before the Chamber of Deputies and is likely to become law within a short time. Among the Bill's provisions is one compelling doctors to notify the name of any patient suffering from venereal disease who stops having treatment whilst still a danger to his neighbours. On receiving such a notification the magistrate-doctor will refer the patient to a centre for compulsory treatment. Any person reported to be a source of venereal infection, as well as those who have suspicious-looking rashes, may be compelled to undergo examination by an official doctor unless he can produce a medical certificate stating that he is having treatment or is healthy. Magistrate-doctors will also be obliged to examine every month all boys and girls over 15 years of age in secondary schools, besides hawkers, domestic servants, and many other classes of the community. All those subjected to this monthly examination, except school-children, will be given a health-card which they will have to carry about with them. Where patients are likely to infect others whilst undergoing out-patient treatment they may be forcibly put into hospital. The Bill contemplates such restraint in the first place, for tramps and prostitutes, and in the second for kitchen-maids, waiters, and other public servants, if suffering from oral lesions, facial rashes, and the like. To ensure their adequate accommodation the State will provide funds to aid municipalities in setting up the necessary institutions. The Bill lays down that an infected person is entitled to moral and financial compensation from the one who infected him. Individuals who have infected many others will be prosecuted by the health authorities, even if the violated parties do not demand it. To establish the fact of infection, a thorough investigation must be made and the case must be submitted to a specialist in venereal disease; where syphilitic infection is alleged, the claim must be made within four months from the date of infection. The Bill promises very serious punishment for syphilitic nurses who infect healthy infants and for parents who employ a healthy woman to nurse a syphilitic baby, or board out a syphilitic child with healthy people. No person suffering from any venereal disease will be allowed to marry until completely cured, and registrars will demand a medical certificate from all candidates for marriage, stating that they are free from such disease. Registrars will also be obliged to distribute booklets explaining the perils of venereal diseases to those whose marriages they record. As regards prostitution, the Bill states that only girls above 18 years of age may get licences. Girls younger than 18, if presenting themselves for registration as prostitutes, are to be placed under the care of their parents or else put in reformatories. Where girls wish to give up prostitution the competent magistrates will have to place them in institutions or refer them to employment bureaus, where they can get decent work. The new law is going to ensure the success of the campaign against venereal disease by setting up an antivenereal office, which will have the duty of controlling and supervising prostitution. This office will be provided with special health and morality police, who will, in fact, be detectives.

A Source of Income for Dentists.

Some time ago a dentist called Anbock settled in Cluj and by reason of good connexions soon developed a large practice. His method of treating the teeth was very simple. He told the patients that the gold fillings in their teeth were useless and vile work, that

the alloy was bad, and that it had to be changed. He began his methodical treatment by picking out the gold from the properly made fillings; when the teeth again became painful he replaced the gold with a valueless yellow alloy which, he said, was pure gold, prepared after his special method, patented in all foreign countries. By the time that the patients had begun to feel a peculiar taste in their mouths the eminent dentist had made his escape. The unfortunate patients were informed by other dentists that the fillings which the swindler had put in were only exploratory fillings, and accordingly reported their misfortunes to the police. The culprit, however, has moved on to Jugoslavia.

Prohibition of Secret Remedies.

The Bucharest Health Board has issued an order that all so-called patent medicines be removed from drug stores and chemists' shops within three months. These drugs are called secret remedies in Rumania because they bear on the label no indication of the ingredients they contain. Instructions have been issued to all custom houses that no foreign medicinal preparations of this kind be allowed to enter the country, even if marked as samples of no declared value, and any custom house officer convicted of permitting such medicines to pass will be suspended from his position.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

County Medical Officers of Health.

UNDER the Local Government Act, 1925, it became the duty of county councils throughout the Irish Free State to appoint whole-time medical officers of health for each county. Last week the Department of Local Government and Public Health sent a letter to the several councils, reminding them of this duty, and offering to send a medical inspector to explain their position. The reception so far given to the letter has been chilling. The Galway and Wexford councils have flatly declined to take any steps, and several other counties have postponed a decision. It will evidently require more than moral suasion to get the local authorities to move. A salary of £800 was mentioned in more than one county as suitable for their medical officer, though there are few, if any, areas in the Free State in which the salary, on the British Medical Association scale, should not be at least £1100. As most of the supply of medical officers of health must come from England, an attractive salary will be necessary in order to secure competent men. Again, some of the inspectors seemed to suggest that the county medical officer of health should be a jack-of-all-trades, that he should personally be occupied in the medical inspection and treatment of school-children, and in such duties. It is unfortunate that the Minister has, as yet, taken no steps to set up a consultative council, such as is provided for by the Act.

The Milk Supply of Ireland.

The Government of the Free State has recently appointed a Commission on Milk Supply, and last week it was engaged in hearing expert evidence. Dr. J. W. Bigger, professor of bacteriology and preventive medicine in the University of Dublin, urged the grading of milk, and suggested three grades in addition to pasteurised milk, the highest being from tuberculin-tested cows. There was at present no incentive, he said, to supply pure milk, as the price charged was the same as that paid for impure milk. Penalties should be imposed on anyone who sold milk below a specified standard; if the practice persisted the penalty should be exclusion from the milk trade. Dr. J. D. McCormack, Local Government Department inspector, attributed the apathy of local authorities in regard to the Dairies Order to want of knowledge. He recommended closer coördination between urban and rural authorities. A maximum price for milk should be fixed according to grade. Mr. O'Donovan, veterinary surgeon, giving evidence on behalf of the Dublin Corporation, said that the corporation staff should have power to supervise milch cows belonging to the city, even when removed for summer grazing outside the county borough area, and also to supervise the sources of rail-borne milk, where tubercle bacilli had been found.

The first general meeting of the Irish Clean Milk Society was held on Nov. 25th, when Mr. W. Buckley, Chairman of the British National Clean Milk Society, gave an address. He said that America was 25 years ahead of Great Britain so far as the milk-supply was concerned, and pointed out that a great deal more could be done by education than by coercion.

A National Medical Service.

At the annual meeting of the Association of Trade Union Approved Societies held recently the President, Mr. L. W. Duffy, made a strong plea for a national medical service in the Irish Free State. He said that every country in Europe, except Ireland, had rejected the British system of approved societies. The societies had degenerated into benefit-paying organisations on the lines of the old tontine society, and no serious effort was made to prevent illness or cure disease. The mortality from tuberculosis was again on the increase, and the maternal mortality was alarming. Medical benefit on a contributory basis was no substitute for a national health service, and when the public realised what was at stake, and began to appreciate the ravages of the present system, they would demand a national service, even if it were to cost twice as much.

Cancer Research in Dublin.

The principal Irish medical colleges and schools, as well as other bodies, are represented on the committee of the Cancer Research Institute which is to be set up in connexion with the Royal City of Dublin Hospital. Mr. Justice Wylie has been appointed chairman of the committee, Dr. Louis Cassidy honorary secretary, and Mr. Hubbard Clark honorary treasurer. The hospital is going to take over the Erlangen apparatus hitherto worked at the Coombe Hospital, and will furnish a laboratory with other facilities for research work; but Sir John Lumsden, a member of the committee, has denied the report that the committee has been formed to carry on the Erlangen treatment. Its object, he says, is not to advocate any particular form of treatment, but to investigate the origin and treatment of cancer.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH.—On Nov. 9th Prof. Ashley Mackintosh reviewed the groups of causes known to influence or coöperate in the production of arterio-sclerosis, and emphasised the importance of removing them. They included "tear and wear," especially from worry, and infective or toxic causes not necessarily of gastro-intestinal origin. In this connexion he professed himself a believer in an hereditary variation in the viability of the vessels. Prof. Mackintosh was emphatic in his statement that the sufferer from hypertension should be prevented from concentrating his attention on his malady, and for this reason deprecated the too frequent recording of blood-pressure readings, which led to a "hypertension hypochondriasis" (Osler and McCrae). He found greatest benefit from a mode of life which involved as little interference as possible with habits, work, and food, especially in elderly patients. He did not drastically reduce protein but allowed 3–5 oz., especially of white meat, per day, believing that too much stress had been laid on the dangers of giving protein. Diets must not be cut down so far as to lower the patient's general condition. He outlined the proper care of the skin and bowels and strongly advocated the weekly or bi-weekly use of calomel. Before describing other medicinal treatment he discussed the question how far hypertension was a compensatory function, and showed that it was not apparently compensatory so far as the kidney was concerned, there being no proved relationship between the power of concentrating urea and the blood pressure. Prof. Mackintosh referred to other methods of treatment by venesection, by electrical methods, and especially by diathermy, and in conclusion urged the importance of watching the heart carefully.

MEDICINE AND THE LAW.

An Unregistered Specialist.

WHAT is a "specialist"? If a man calls himself a specialist in canine diseases, does not the description amount to a claim that he is "specially qualified" to practise veterinary surgery or some branch thereof within the meaning of Section 17 of the Veterinary Surgeons Act of 1881? Mr. Gill, the Westminster Police-court magistrate, has answered the latter question in the affirmative. A blacksmith who advertised his business as including "veterinary farriery" was held in 1892 to be within the section; so also was a defendant who used the description "canine specialist; dogs and cats treated for all diseases"—this being the decision in Royal College of Veterinary Surgeons v. Collinson ([1908] 2 K.B., 248), which Mr. Gill expressly followed. Section 17 punishes with a fine not exceeding £20 anyone who, not for the time being on the register of veterinary surgeons nor having been on August 27th, 1881, the holder of the veterinary certificate of the Highland and Agricultural Society of Scotland, "uses the title of veterinary surgeon or veterinary practitioner, or any name, title, addition or description stating that he is a veterinary surgeon or a practitioner of veterinary surgery or any branch thereof, or is specially qualified to practise the same." The defendant in the recent case was Mr. Edward Sewell, described in the *Times* report as having been for many years in practice as a veterinary surgeon and canine specialist in South Kensington. He used the offending words "specialist, canine diseases" on the receipt to a bill. It was argued on his behalf that recent decisions have shown a trend towards greater laxity in favour of the unregistered practitioner. Mr. Gill, however, did not agree; he fined the defendant £2 and £10 10*s.* costs, and undertook, if desired, to state a case for a higher court.

The comparative effect of professional registration is well known. No unregistered dentist may practise, or hold himself out as practising or as being prepared to practise, dentistry—an absolute monopoly. No unregistered veterinary surgeon may call himself a veterinary surgeon or veterinary practitioner—a substantial monopoly. But, as was mentioned lately when discussing Lieut-Colonel Kynaston's case, an unregistered medical practitioner has (subject to limitations as to signing death certificates, &c., and as to the Dangerous Drugs Acts) full liberty to practise, so that the registered medical practitioner has virtually no monopoly at all.

Sale of Poisons: Lysol "free from Carbolic Acid."

The Pharmacy Acts and the various enactments about poisons are so complicated that it is high time the law was simplified. Administration, too, might be coördinated, even if this involves the surrender by the Privy Council of some of its surviving powers in this respect. Two months ago an Edinburgh prosecution under the Pharmacy Act in connexion with the sale of a bottle of "lysol" drew fresh attention to the obscurity of the law. As experts are aware, there is a subtle legal distinction between the label "Poison" and the label "Poisonous." Section 17 of the Pharmacy Act of 1868 (amended by the Dangerous Drugs and Poisons (Amendment) Act of 1923) requires that poisons shall be labelled with the word "Poison," the name of the poison, and, if poison is merely one of the ingredients of a preparation, with particulars of the proportion of the poison to the other ingredients. The poisons which must thus be labelled are those in the schedule of the 1908 Act, and certain others added by the Privy Council on the recommendation of the Pharmaceutical Society. The schedule includes "carbolic acid and liquid preparations of carbolic acid and its homologues containing more than 3 per cent. of those substances," with certain exceptions for sheep-wash and other agricultural and horticultural preparations. Another part of the 1908 Act (Section 5) says that certain acids are not to be sold by retail unless the bottle or vessel containing them is labelled with the name of the substance, the word "Poisonous," and the name and address of the seller. The acids include sulphuric, nitric, and hydrochloric acid, soluble salts of oxalic acid and other substances prescribed by Order in Council; an Order in Council of 1912 added "all liquid substances sold as carbolic or carbolic acid or carbolic substitutes or carbolic disinfectants containing not more than 3 per cent. of phenols."

Last September an Edinburgh druggist's assistant sold a bottle of lysol. On the carton were the words "Free from Carbolic Acid." It was labelled "Poisonous," and to that extent it complied with Section 5 of the 1908 Act; but it was not labelled "Poison," and so it did not comply with the amended Section 17 of the 1868 Act. The assistant was summoned for having failed to comply with the latter requirement, the lysol being "a liquid preparation containing more than 3 per cent. of carbolic acid and its homologues." A report of the case published in the *Analyst* shows that Mr. J. Rutherford Hill, resident secretary of the Pharmaceutical Society, said that analysis of the bottle disclosed approximately 31 per cent. by weight of carbolic acid and its homologues, commonly known as cresols; he thought the label "free from carbolic acid" could not be true, and was misleading. The city analyst gave confirmatory evidence, but was unable to say whether the bottle contained sufficient carbolic acid to make it poisonous; nor had either witness, it appears, determined the exact amount of carbolic acid actually present. The defendant admitted selling the bottle, but said he did not know lysol was a poison. The label "free from carbolic acid" conveyed no special information to him; he knew nothing of carbolic acid or its effects. The sheriff held the charge not proven on the ground that there was no definite proof before him of the presence of carbolic acid in the bottle or of its presence in a quantity making the liquid a poison within the schedule. He remarked that the label "free from carbolic acid" would suggest to an unskilled person that in selling the lysol he was not selling carbolic acid, and he added that only a skilled person would understand the meaning of homologues of carbolic acid. These remarks suggest that, even if the missing proof had been abundantly supplied, the sheriff would have hesitated to inflict a heavy penalty upon the druggist's assistant. In other words, though ignorance of the law is no excuse, the law is in so technical a state that magistrates will not punish the ordinary citizen for breaking it.

Vaccination: Conscientious Objector's False Declaration.

It is the common experience of those who practise law in criminal courts that for some reason convictions for perjury are hard to obtain, and punishments for perjury are often lenient. Thus, prosecutions which should have the effect of deterring prospective perjurers end by deterring prospective prosecutors. Last year's Criminal Justice Act handed over to quarter sessions and to courts of summary jurisdiction the power to deal with offences under Section 5 of the Perjury Act (false statutory declarations). The delegation of jurisdiction may lead to more convictions if it also leads to still smaller sentences. Under the Vaccination Act of 1907 a parent must make a statutory declaration of conscientious objection within four months of the date of a child's birth. In a case recently heard before the Kingston justices a vaccination officer had pointed out to a parent that the latter had not completed an exemption form in respect of his infant daughter nearly 5 months after her birth. The father thereupon made a declaration at the magistrates' clerk's office that his daughter was born on May 30th, though the correct date was April 30th. The defendant pleaded that he had made an honest mistake, and added that he had been away from home when the child was born. The Bench presumably did not accept this plea entirely, for, if

successful, it would have involved acquittal. They fined the father £3, stating that they believed he had acted hastily and without thinking what he was doing.

Acquittal of Two Doctors on a Charge of Manslaughter.

On Nov. 30th at Manchester Assizes Dr. Arthur Stuart Holden and Dr. Frederick Langton Webster were acquitted on a charge of manslaughter in connexion with the death of a young woman who had succumbed in Dr. Webster's surgery. The accused were committed for trial for murder on a coroner's warrant following an inquest at Bamber Bridge on Oct. 29th, but the charge was later reduced. There was a preliminary hearing of the case before the Bamber Bridge justices on Nov. 5th and 8th. The defendants denied the suggestion that an illegal abortion had been performed and stated that the patient had died during an examination under an anæsthetic. Sir Bernard Spilsbury, who examined organs sent to him, and Dr. W. A. Simpson, acting police surgeon, who conducted the post-mortem examination, found circumstances which led them to form certain suspicions, but Dr. T. Watts Eden, who was called by the defence, said that he did not agree that there was any conclusive evidence of an instrument having being used or an operation performed. Dr. W. Fletcher Shaw and Dr. D. Dougal also gave evidence to the same effect. Dr. S. R. Wilson considered that the manner of death was consistent with death from syncope under a light anæsthetic. Mr. Justice Branson, in summing up, pointed to the irreproachable character of both accused doctors, and the jury after 15 minutes' deliberation, brought in a verdict of Not Guilty, with which the judge said he entirely agreed.

Dr. Holden and Dr. Webster were defended by the London and Counties Medical Protection Society.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are some of the statistics of four administrative counties for 1925 :—

Name of county.	Estimated mid-year population (R.-G.).	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.	
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Heart disease.	Infant mortality.	Maternal mort. from childbirth.
Lancashire..	1,785,500	15·9	12·7	0·88	1·27	2·7	1·7	82	5·2
Essex	958,700	17·1	10·3	0·87	1·36	1·6	1·5	52	3·0
Somerset ..	398,000	15·5	12·2	0·78	1·50	2·0	1·9	51	4·2
Gloucestershire ..	334,000	16·7	12·4	0·87	1·53	1·9	1·9	56	4·5

Lancashire.

Dr. J. J. Butterworth shows by tabular statements, diagrams, and maps the great changes during the last 30 years in various rates in the 121 districts which make up the administrative county. Thus, comparing the first quinquennium of this period with the last, the birth-rate has fallen from 28·34 to 19·13, the death-rate from 17·64 to 12·61, the infant mortality rate from 167 to 85, and the death-rate from respiratory tuberculosis from 1·19 to 0·72. The maps show that whereas in 1891–95 23 of the 121 districts had death-rates of 20 and upwards and 70 had death-rates of from 15 to 20, in 1921–25 there were no districts with death-rates of 20 and upwards, and only 7 with death-rates from 15 to 20. Other maps show that whereas in the earlier quinquennium 65 of the districts had infant mortality-rates of 150 and upwards and 46 had rates from 100 to 150, in the later quinquennium no districts had infant mortality-rates of 150 and upwards, and only 19 rates of between 100 and 150. Five of the districts have no hospital accommodation for small-pox and 12 have no accommodation for other infectious diseases. On June 30th, 1926, there were 901 county patients in tuberculosis hospitals, 677 being adults and the remainder children.

The county has arranged with 11 hospitals for the operative treatment of tonsils and adenoids, and adequate provision has been made for following-up, re-examination, and after-treatment. Under the council's scheme 598 children received operative treatment during 1925. The dental scheme has been extended and clinics established at 15 centres. The dental staff consists of seven full-time surgeons and one part-time surgeon. The scheme comprises the routine treatment of the 6-year olds and the following-up of this group in subsequent years. Apart from this routine work the dentists treat expectant and nursing mothers, children under school age, and "casuals." These last include cases made urgent by pain or abscess and cases where the child's health is suffering from the state of the teeth. It is impossible under this scheme to inspect and treat the older children. A mass of details are given in the report with regard to the sanitary circumstances of the 121 districts. Under the heading of Smoke Abatement we learn that 3129 observations were made and that the number of legal proceedings was 28. The time limit for the emission of black smoke permitted by the different local authorities varies from three minutes in the hour to the very high limit of 12. The medical officers of about a hundred districts state that there is a shortage of houses. The County Public Health Department had 66 samples of milk examined for tubercle bacilli, which were found in five of them. The officials of 28 of the local authorities submitted 366 samples, of which 39 contained tubercle bacilli. The County Health Department helped the Lancashire Milk Recording Society with its second "Clean Milk" competition, but there were only seven competitors. Out of 2990 milk samples 12·8 per cent. were reported to be adulterated, deficient or dirty, as compared with 9·4 per cent. in 1924. The samples from one vendor contained formaldehyde.

There were 178 notifications of encephalitis lethargica during the year, with 98 deaths. The districts with the highest death-rates from pulmonary tuberculosis were Litherland with 1·72, Ormskirk with 1·57, and Audenshaw with 1·45. Of the 729 midwives, 80 per cent. are qualified by examination and the remainder are "bona fide." There were 93 notifications of puerperal fever and 25 deaths. This high case-fatality is taken to indicate the incompleteness of the notification. The Registrar-General gives the number of deaths from puerperal sepsis in the county area as 41.

An inquiry was made as to the present condition of the eyes in cases of ophthalmia neonatorum reported during the years 1919 to 1923. The tabular statement appears to indicate an improvement during the later years, as the number of totally blind children was two for 1919, three for 1920, two for 1921, and none for 1922 and 1923. (During 1925 out of 14 notified cases there was one case of total blindness and five of impaired vision.) Since April, 1919, the whole of the medical and nursing staffs of the Education Committee and Health Committee have been amalgamated, and children are now being looked after by the same doctors and nurses from birth or before until they leave school. This has proved a great advantage. An experiment has been made in giving a course of lectures and demonstrations on baby management to school-girls aged from 11 to 13 at one of the centres. Those who attended showed intense interest and great eagerness to learn. The county council's child welfare area comprises 74 districts; in the remaining 47 the local sanitary authorities are responsible for the child welfare work. The orthopædic scheme will shortly be complete. For the Manchester area there is the Ancoats Hospital, with a country hospital at Windermere and six out-patient centres, with Mr. Harry Platt in charge as consulting orthopædic

surgeon. For the Liverpool area the central hospital is in Myrtle-street, Liverpool, and the country hospital at Heswall, on the Dee, with Mr. T. P. McMurray as orthopædic surgeon and Sir Robert Jones as consultant. Up to the present time five out-patient centres have been set up in the Liverpool area. The county council has purchased the Biddulph Orthopædic Hospital, which is beautifully situated in North Staffordshire, only 28 miles from Manchester, and stands in its own grounds of 91 acres. When this hospital has been made thoroughly up to date it will serve the portion of the county other than the areas allocated to Liverpool and Manchester.

Essex.

Dr. W. A. Bullough reports that 22,628 houses were erected during the five years 1920–24. The figures are not available for 1925, but he states that the rate of building is now more than meeting annual requirements, and should tend to relieve some of the gross overcrowding. A new appointment has been made of a senior clinical ("part-time") tuberculosis officer. In the absence of a much-needed central sanatorium a scheme for large extensions at Black Notley has been put forward, which, if approved by the Ministry, will result in the first up-to-date sanatorium in the county. There are now eight tuberculosis care associations in the county doing excellent work, chiefly in populous districts. At the end of 1925 the county council was the authority under the Notification of Births Act in 26 out of the 47 sanitary districts, and in order to avoid confusion and overlapping Dr. Bullough would like the county council to be the sole authority for all rural districts and those urban districts which are not education authorities. The combined medical service by which local medical officers of health become assistant county medical officers for the purpose of tuberculosis, school inspection, child welfare, venereal diseases, and supervision of midwives, and which was begun in 1920, has now been extended to 33 of the 47 districts, and Dr. Bullough, after five years' experience, is satisfied that the standard of the health services has been raised thereby.

Dr. Bullough claims that his county has the greatest number of farms producing Grade A milk.

Reviewing the situation of isolation hospitals and small-pox hospitals, he emphasises the advantages both in economy and efficiency of pooling the accommodation in all the hospitals in the county. If this were done, he says, half the isolation hospitals would serve the needs and the remaining half could be used for advanced tuberculosis, open-air schools, maternity hospitals, and convalescent homes for orthopædic patients. A greater variety of infectious diseases could also be admitted, because particular hospitals could be allocated to particular diseases. The county council is chary about undertaking the adequate examination of milk for tubercle. Thus the number of biological tests for the year ending March 31st, 1926, was limited to 15. Other matters dealt with by Dr. Bullough are: the nuisance caused by the dumping of London refuse on the low-lying land in the S.E. of the county; the progress of the town-planning scheme for the area between Shoeburyness and East Ham; and the water-supply of the county. The Stour appears to be one of the most likely sources for future needs, but this river belongs to Suffolk. Other possible sources are the rivers Colne and Roding. The county sanitary inspector deals with some of the difficulties in obtaining a pure milk-supply owing to the deep-rooted objection of a certain class of cowmen to any change in habits.

Somerset.

Dr. W. G. Savage reports 52 notifications of encephalitis lethargica, with 24 deaths. He, like Dr. Bullough, condemns the present wasteful and unsatisfactory system of having a number of small isolation hospitals under different authorities scattered through the county, whereas, "with present facilities for travel, a few hospitals could well serve the needs of the county with economy in cost and a great improvement in the quality of treatment provided." The county sanatorium at Quantock was opened in June, 1925, with 61 beds, 30 for men and 31 for women. The results after a year are very encouraging. The number of contacts attending the dispensary for examination was 21·9 per cent. as compared with 20·8 per cent. in 1924. Over 32 per cent. of the pulmonary tuberculosis contacts showed suspicious or definite signs of tuberculosis in both years. Unused buildings at Quantock were utilised as a summer camp for weakly children with most satisfactory results. Dr. L. J. Short, the tuberculosis officer, reports that of 1589 new cases examined 495 were diagnosed as having pulmonary tuberculosis. Of these 495, 203 were only in stage 1, "and experience has shown that nearly all these are likely to get well." Every year, says Dr. Short, it has been possible to write off a number of persons as cured and unlikely to relapse, and the number of ex-patients in full regular work continues to increase. These results are so very different from those reported elsewhere that Dr. Short cannot help wondering if there is something specially favourable in the Somerset air, constitution, or tuberculosis scheme. Trained midwives attended 53·8 per cent. and "bona fide" midwives 2·6 per cent. of the births. The trained midwives sent for medical aid in 27·5 per cent. of their cases, the "bona fide" in 11·9 per cent. There were 22 notifications of puerperal fever with 10 deaths, and Dr. Savage would like to see these cases removed in the early stages to hospital. The isolation hospitals would be the most suitable if an efficient staff were available. There were 30 notifications of ophthalmia. Though there was no complete loss of sight, there were four cases with probable definite impairment of vision. Here again Dr. Savage advocates immediate hospital treatment for all severe cases. In September a comprehensive scheme for dealing with crippled children was begun. Twenty-four beds were retained at the Bath Children's Orthopædic Hospital, and a number of centres are provided throughout the county at which the orthopædic surgeon and nurse attend. All varieties of crippling defects are included in the scheme. A fuller account will be given of the results achieved in next year's report. The pollution of rivers from milk depôts gave little trouble during 1925. The number of houses erected, 1386, was a considerable increase on any of the previous three years, the numbers of which were 995, 646, and 973. Meat inspection is carried out well in some districts, poorly in others. During the year the county council provided a special course of lectures and demonstrations for the sanitary inspectors of the county at the well-equipped Weston-super-Mare public abattoir. About 30 inspectors attended. Dr. Savage finds that in some cases butchers who give written notice of intention to slaughter at fixed times on fixed dates in some cases slaughter at other times without giving the required notice and so avoid inspection. Graded milks make some progress; thus at the end of 1925 there were in the county 4 producers of Certified Milk, 5 of Grade A (tuberculin tested), and 4 of Grade A, to be compared with 1, 1, and 2 respectively for 1924.

Gloucestershire.

Dr. J. Middleton Martin made an inquiry into the geographical distribution of fatal diseases in his county during the decade 1901–10. He has followed this with a similar inquiry for the decade 1911–20. The general result of the earlier inquiry was the conclusion that the most important factor was the circumstances of the home as opposed to the more remote environment. In comparing the two decades it is to be noted that at the earlier period the deaths under one year and the deaths from one to five years constituted 15 and 6 per cent. respectively of the total deaths, whereas during 1911–20 the deaths under one year were only 10·2 per cent. and the deaths from one to five years 4·4 per cent. of the total mortality. The evidence from the study of the

geographical distribution of disease brings out the fact that there is a very large incidence of enlargement of the thyroid gland among school-children in the area following the Cotswold Hills from the north-east of the county to the outskirts of Bristol, with parallel bands of low incidence following the Severn and of very low incidence on the west of the Severn. There are two curious exceptions. West Dean R.D. has a high rate in the area of lowest incidence, while Stow-on-the-Wold R.D. has a very low rate in the area of high incidence. On the Cotswolds the water is usually hard and pollution not more than in other places. The local waters in the Severn valley are also hard. On the west of the Severn the most striking fact is the exceptionally high rate for West Dean, which surrounds an urban district, of almost identical circumstances, with a very low rate. The contrast between the west and east sides of the forest may be due to the fact that West Dean has a doubtful water-supply, whereas the east side of the forest has mostly a public water-supply of good quality. Other conclusions resulting from this inquiry were that pediculosis in the head is most prevalent in agricultural districts and in areas where there is much female labour; that the distribution of pulmonary tuberculosis tends to be the converse of that for other forms of tuberculosis, and that bronchitis seems to be an illness of sheltered rather than of exposed conditions, whilst the reverse holds for pneumonia. In the surveys for both decades Dr. Martin suggests that the lesson may be—the great importance of the immediate as compared with the remote environment.

During 1925 midwives attended 64 per cent. of the births and sent for medical help in over 28 per cent. of their cases. It is now very rare for an uncertified woman to act as a midwife. The scheme for the extension of medical services makes steady progress with a corresponding lessening of expense. Thus if 1925 be compared with 1922 the total cost per attendance has been reduced from 15*s.* 6*d.* to 7*s.* 11¾*d.*; the cost of medical officers per attendance at out station from 4*s.* 3½*d.* to 2*s.* 0¼*d.*; and the cost of specialist's services per case from 12*s.* to 8*s.* 8½*d.* The work is carried out at three general hospitals and 11 out stations. The chief feature of the scheme in 1925 has been the extension of the orthopædic service. The orthopædic surgeon is Mr. J. S. Robinson, of the Cheltenham General Hospital, at which institution ten beds have been retained. An orthopædic nurse began work in November. The future development of this service is at present under consideration, and the construction of a hospital for crippled children may be the result.

Progress has been made, as the result of better transport facilities, in making the isolation hospitals serve wider districts. The year 1925 saw greater activity in the provision of houses, and an encouraging feature is the steady increase in the number of houses built by private enterprise from 53 in 1919 to 718 in 1925. Dr. Martin hopes that more will be done in the way of renovation and enlargement of existing houses, and is of opinion that the grants for repairing work which will shortly be available will act as a valuable stimulus to improved housing.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 20TH, 1926.

Notifications.—The following cases of infectious disease were notified during the week: Small-pox 353 (last week 218), scarlet fever 2110, diphtheria 1133, enteric fever 55, pneumonia 1123, puerperal fever 57, puerperal pyrexia 166, cerebro-spinal fever 7, acute poliomyelitis 47, acute polio-encephalitis 4, encephalitis lethargica 46, dysentery 6, ophthalmia neonatorum 90. There were no cases of cholera, plague, or typhus fever notified during the week. The total of cases of acute poliomyelitis and polio-encephalitis taken together—namely, 51—is substantially higher than last week, 10 cases having been notified from the County of London, 3 of them from Wandsworth, the others widely scattered; the other counties reporting more than 3 cases were Devon 4, Lancaster 4; there were no cases reported from Rutland and only 3 from Kent—namely, 1 each from Beckenham, Tunbridge Wells, and Eastry R.D. Of the 353 cases of small-pox, 288 were reported from the county of Durham, only 5 of these from Gateshead C.B., the remainder scattered over 18 urban and rural districts, Brandon and Byshottles standing first with 92, Lanchester second with 41; Northumberland reported only 4 cases, 1 from Newcastle C.B., 3 from Ashington; the West Riding of Yorkshire reported 38 cases—viz., 3 from Sheffield, 6 from Doncaster, 12 from Mexborough, and the remainder from seven urban and rural districts; Derby reported 16 cases, 4 from the county borough, the others from five districts; Lancaster reported 5 (Ashton-in-Makerfield 4, Golborne 1); Nottingham 1 (Sutton-in-Ashfield); Yorks, North Riding 1 (Middlesbrough).

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox, 1 (0) from enteric fever, 6 (1) from measles, 3 (0) from scarlet fever, 28 (3) from whooping-cough, 32 (10) from diphtheria, 68 (15) from diarrhœa and enteritis under 2 years, and 78 (19) from influenza. The figures in parentheses are those for London itself.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

THE following appts. have been notified:—Surg. Comdrs.: J. G. Danson to *Maidstone*; G. O. M. Dickenson to *Victory*, for Royal Marine Infirmary, Portsmouth; and F. E. Anley to *Weymouth*, and as Fleet Medical Officer.

Surg. Lt.-Comdr. G. L. Ritchie to *Lowestoft*, on recommg.

Surg. Lts.: D. H. Kernohan to *Ganges*, for R.N. Sick Quarters, Shotley, temp., addl; and J. F. Kirwan to *Adamant*.

ROYAL NAVAL VOLUNTEER RESERVE.

Prob. Surg. Lt. R. B. H. Wyatt to be Surg. Lt.

Surg. Lt. T. W. Drummond to be Surg. Lt.-Comdr.

ROYAL ARMY MEDICAL CORPS.

Maj. O. C. P. Cooke retires on retd. pay, and is granted the rank of Lt.-Col.

Capts. H. D. F. Brand and C. Armstrong to be Majs.

Capt. W. I. F. Powell is secd. for duty with the Sudan Def. Force.

TERRITORIAL ARMY.

Maj. W. F. Munro resigns his commn. and is granted the rank of Lt.-Col. with permission to wear the prescribed uniform.

D. G. Robinson to be Lt.

Capt. M. C. Paterson, R.A.M.C., to be Divl. Adjt., 50th (Northumbrian) Div., vice Capt. J. M. Mackenzie, vacated.

Lt. E. L. Hancock is secd.

ROYAL AIR FORCE.

Flight Lt. P. A. Hall is promoted to the rank of Squadron Leader.

Flying Officer J. Parry-Evans is promoted to the rank of Flight Lt.

Temp. Capt. J. R. Williams, General List (Army), Dental Surgeon, is granted a temporary commission as a Flight Lt.

Flight Lt. J. S. Smith (Capt., Army Dental Corps) relinquishes his temporary commission on return to Army duty.

INDIAN MEDICAL SERVICE.

The King has approved the relinquishment of their temporary commissions by the following officers: Capts. Dhirendra Prasad Bose, Gopal Das Malhotra, Balkrishna, M.B., Aswini Kumar Nandi, Pramatha Nath Ghosh, Palathunkal Mathen Matthai, Antonelli Saldanha, Chhaganlal Motichand Contractor, Amulya Prasad Maitra, Mancher-shaw Ardeshir Mithavala, Madhav Vithal Pathak (these officers are permitted to retain the rank of Capt.). Sobha Ram Puri, Narayan Das Mehta, Munshi Ram Gupta, Jiban Ratam Dhar, Hem Chandra Mitter, Rustim Edulji Dadachanji, Vishnu Kashinath Parab, Jehangir Hormusjee Clarke.

Maj.-Gen. Sir Charles Mac. Watt has retired from service.

Dr. Kashi Prasad Bhatnagar, of the temporary Provincial Medical Service, medical officer in immediate charge of the Chamoli Dispensary, Garhwal, to officiate as Civil Surgeon, Garhwal, during the absence on leave of Dr. L. V. Jaensch.

Maj. E. G. A. Mathews, Civil Surgeon, on return from leave, is posted to Hardoi. Dr. Ganga Prased Rawat, officiating Civil Surgeon, is posted to Jalaun (Orai) from Hardoi.

Dr. Ganga Charan Garg, of the Provincial Medical Service, Medical Officer in immediate charge of the Sadr Dispensary, Rae Bareli, to the District Jail, Lucknow, for temporary duty. Col. G. Tate succeeds Col. A. W. R. Cochrane as Inspector-General of Civil Hospitals of the United Provinces.

Dr. A. C. Bentley, Director of Public Health, Bengal, is granted an extension of leave for 16 days.

GENERAL MEDICAL COUNCIL.

PENAL CASES.

TUESDAY, NOV. 23RD.

IN accordance with the usual custom the penal cases were heard in public, the Council deliberated on them in camera, and the results were then announced.

The Registrar read reports by the Dental Board of the United Kingdom on the cases of William Laird, registered on Feb. 18th, 1925, as of 6, Hartington-street, Belfast, "Dentist, 1921," charged with employing persons to canvass for him; of Hubert Lancelot Terry Bramley, registered on Jan. 6th, 1923, as of 13, Bracton-drive, Gordon-road, Nottingham, "Dentist, 1921," charged with personal canvassing; and of John William Marsh, registered on Sept. 11th, 1922, as of "Glenthorne," High-street, Thame, Oxon, "Dentist, 1921," who had been convicted and imprisoned for obtaining goods on false pretences. The Board had considered that the names of all these practitioners should be erased from the Dental Register. The Council ordered that they be erased.

The Case of Hira Lal Basu, registered as of 87B, Park-street, Calcutta, India, L.M.S. Calcutta, 1899, F.R.F.P.S. Glasg., 1913. This practitioner had been summoned to appear before the Council on the charge of advertising his arrival in Rangoon by paragraphs in local newspapers in 1925, and by causing articles to be published in these papers in which he claimed to be able to perform the "Steinach operation" for rejuvenation. Mr. Basu did not appear and was not represented. The Council's solicitor read a letter from him in which he stated that an acquaintance had lured him to Rangoon with the promise of a 3000 guinea fee, and that the offending matter was published without his knowledge. The Council ordered that his name be erased from the Register.

The Case of Egerton Carl White, registered as of 238, High-street, Cheltenham, M.B., Ch.B., 1912, U. Glasg., charged with abusing his position by committing adultery with a married woman with whom he stood in professional relationship. Dr. White was represented by Mr. O. Hempson, solicitor. The solicitor for the Council stated that Dr. White had performed two operations on Mrs. Watson in 1922 and that in September, 1924, they had started to live together. A divorce had been granted to Mr. Watson in May, 1925, and made absolute in November, 1925. Dr. White, giving evidence in his own defence, stated that he had first met Mrs. Watson socially at the end of 1921, and had become her friend and then her lover. Their sexual relationship had begun shortly after Christmas. They would have gone away openly then, but that Dr. White was in debt to his wife's family for certain capital with which he had set up in practice, and until he had paid this off he did not feel he was justified in taking that step. Mrs. Watson suffered from dysmenorrhœa and had naturally asked his advice; he had recommended curettage and she had preferred that he should perform this operation. He had done so twice in 1922. He had exercised his medical skill as a friend and not as a professional man and had rendered no account. In 1924, since he had then cleared himself of debt, he and Mrs. Watson made their relationship public. Mrs. Watson corroborated. Cross-examined about a sum of money Mr. Watson said he had given her to pay for her operation, she stated that she had asked for it for other purposes. There was no evidence that the sum was paid to Dr. White. The Council found that the facts alleged against Dr. White were not proved to their satisfaction and dismissed the case.

The Case of Thomas Blaney, registered as of 17, Saville-place, London, S.E. 1, L.R.C.P. Edin., 1920, L.R.C.S. Edin., 1920, L.R.F.P.S. Glasg., 1920. This practitioner had been convicted in 1925 for being drunk and incapable and was also charged with being drunk when certain patients were under his professional care. Mr. Blaney, who was represented by a solicitor, stated that he had suffered from domestic trouble which had induced him to drink to excess, but he had now been a teetotaller for four months. He produced two patients as witnesses to his good character. The Council postponed judgment for one year on the assurance of the respondent that he would abstain from alcohol during that time, and required him to forward evidence of his continued good conduct before their next November session.

The Case of Robert John Campbell, registered as of 7, Bradford-street, Ancoats, Manchester, M.B., Ch.B., 1922, Aberd., who appeared before the Council charged with having been convicted of drunkenness in 1923 and of having been convicted in May, 1926, of being drunk in charge of a motor-car and of driving to the public danger. Dr. Campbell's defence was that he had performed three operations on the day when the alleged offence was committed and was under the influence of chloroform, to which he was highly susceptible. He had had nothing to drink but a glass of beer and one whisky all day, but was sleepy because of the anæsthetic. This defence had not been given its full weight by the magistrate who had tried the case. The Council decided, on Dr. Campbell's undertaking to abstain altogether from alcohol in the future, not to erase his name from the Register.

The Case of Percy Bateman, registered as of 423, New Cross-road, S.E. 14, L.R.C.P. Edin., 1906, L.R.C.S. Edin., 1906, L.F.P.S. Glasg., 1906, who had been convicted on four occasions for drunkenness, three of them during the last six years. Mr. Bateman undertook to abstain from alcohol, saying also that he was taking a long rest from practice. The Council suspended judgment for a year under the customary guarantees.

The Council then considered business in camera until the end of their Wednesday sitting.

THURSDAY, NOV. 25TH.

The Case of David Davey Rosewarne, registered as of 2, Vere-street, London, W. 1, M.R.C.S. Eng., 1909, L.R.C.P. Lond., 1909, charged with abusing his position as a medical man by seducing a patient whom he was attending professionally, and also with having sexual intercourse with her on divers subsequent occasions while she was still his patient. The Council heard this case in camera, and decided to erase the name of Mr. Rosewarne from the Register.

EXECUTIVE COMMITTEE.

At a meeting of the Executive Committee the official notification was made of the reappointment of the following members of the Council: Mr. Samuel Osborn, Prof. J. B. Leathes, Dr. E. Magennis, Dr. D. J. Coffey, Sir J. W. Moore, and Dr. A. W. Mackintosh.

The following names, erased under Section 14 of the Medical Act, 1858, were restored to the Medical Register: Alexander Girvan, J. E. Hannigan, Sir Robert Porter, Henry C. E. Quin, F. G. Ralston.

The Poisons and Pharmacy Acts.

A communication from the Privy Council was read, in which the General Medical Council were asked to nominate a representative to serve on a committee appointed to consider the scope and administration of the Poisons and Pharmacy Acts. The President expressed his willingness to serve in the meantime, but doubted whether he would be able to continue a member after the November meeting. He was nominated by an unanimous vote.

Dangerous Drugs Regulations.

In the regulations made under Section 7 of the Dangerous Drugs Act, 1920, amending the Dangerous Drugs Regulations, 1921, and dated August 27th, 1926, the Secretary of State is empowered to refer the question of whether a medical practitioner is administering dangerous drugs otherwise than as required for purposes of medical treatment, to a tribunal in England of three members, one each to

be nominated by the General Medical Council, the Royal College of Physicians, and the British Medical Association. A similar tribunal is to be set up in Scotland with a nominee from the Royal College of Physicians of Edinburgh in place of that from the Royal College of Physicians of London. Sir Humphry Rolleston, with Dr. Wardrop Griffith and Dr. R. B. Wild as substitutes, was nominated for England, and Dr. A. Mackintosh, with Dr. J. A. Adams as substitute, for Scotland.

Sir Nestor Tirard was nominated by the Council to sit on the Advisory Committee newly appointed by the Ministry of Health to make regulations under the Therapeutic Substances Act.

Medical Practice in Malta.

Under Ordinance No. XVII. of 1901, amended 1906 and 1921, no one may practise the medical profession in Malta without a licence from the head of the Government. This licence is granted to any British subject producing a certificate from the Medical Board showing that he is a British subject of full age and is qualified by a recognised university or under the provisions of an Act of the Imperial Parliament. Physicians so licensed have certain duties which they must carry out, under penalty of fines for the first offence and imprisonment for the second. They are obliged to attend urgent cases by day or by night, to report to the superintendent of the public health anything they observe that may affect it, and to inform the police of every case of serious bodily harm, every death, and every birth at which no midwife has been present. Physicians are prohibited from practising pharmacy, and it is forbidden to employ any conventional sign in a prescription.

The amended Act was read before the Executive Committee.

OTHER BUSINESS.

On Thursday, Nov. 25th, the General Council ordered the following names to be restored to the Medical Register: David Williamson Anderson, removed 1925; Edwin Ernest Willis, removed 1922; William Joseph Ryan, removed 1926.

The Council received reports from the Education' Examination, Public Health, and Pharmacopœia Committees.

The number of copies of the British Pharmacopœia sold in the year ending Nov. 20th was 2401, an increase over last year.

The English Branch Council nominated Mr. L. P. Gamgee as a member of the Examination Committee in place of Dr. W. L. H. Duckworth, who has resigned his seat on the Council.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—At a meeting of this society on Nov. 19th Dr. Crawford Watson took the chair, and Dr. Wilfrid Edgecombe (Harrogate) read a paper on Vaccine Therapy in General Practice. Prophylactic immunisation, he said, depended mainly on the specific reaction to a vaccine, whereas curative immunisation appeared to depend mainly on the non-specific factor. General, focal, and local reactions might be caused by injection of a non-specific vaccine. In treating chronic infective diseases with vaccines three conditions should be fulfilled: the organism of the vaccine should be the true causal organism of the disease; the vaccine should be autogenous; and the source of infection should be located and removed if possible. He condemned speculative vaccines made from the bowel, or other source on the assumption, without adequate proof, that therein lay the source of infection. Any good from such vaccines must be due to the non-specific reaction, of the same order as the familiar protein-shock reaction. Prophylactic immunisation by vaccines in certain diseases, such as small-pox and typhoid, stood upon firm ground. Curative immunisation was on a less secure footing, and much of the vaccine therapy of the present day was purely empirical. A case of cervical rib was shown by Mr. E. R. Flint, and Dr. William MacAdam demonstrated a case of intermittent hydrarthrosis; whilst other patients were shown by Dr. J. Stewart, Dr. C. W. Vining, Dr. Cecilia Shiskin, Dr. R. Veale and Mr. A. Richardson, and radiographs by Dr. H. B. Scargill.

Correspondence.

"Audi alteram partem."

MEDICAL SCHOOLS AND THE LONDON UNIVERSITY BILL.

To the Editor of THE LANCET.

SIR,—The alterations in the constitution of the University of London which are proposed by the Departmental Committee will, in my opinion, be thoroughly advantageous.

The academic government of the University is at present in the hands of a Senate of 55, of whom 17 are nominees of the Crown or of bodies who have nothing officially to do with teaching. The future Senate will be a body of 48, of whom 25 will be directly concerned with teaching, 16 will be, as at present, the guardians of the interests of external students, and 5 will be coöpted by the Senate. It will be a much better body for academic purposes than the present Senate.

The present Senate is an extremely bad body for purposes of finance and general policy, and I do not think that the future one is likely to be any better. It is proposed to place those matters in the hands of a smaller body—the Council, on which the Senate will have a majority (eight members), and the Crown and the L.C.C. will appoint six. Such a body exists, I believe, in all English Universities except Oxford and Cambridge, and works well. There is no reason why it should not work well in London. The Council would act on the same principles as those on which the University Grants Committee now acts, and would be far less dictatorial than the L.C.C. now finds it necessary to be.

The Bishop of Gloucester takes alarm unnecessarily. The control of the University can hardly be said to be in the hands of outside members when the Senate has a majority on the Council. It is, indeed, recommended that the University should examine the governing instruments of the present schools. But it is not at all likely to object to them in any important detail since it has already examined them before the schools were admitted. Nor is it at all more likely to be unsympathetic to schools which wish to appeal for money than it is now. Why should it? The schools do not appeal for the fun of the thing, but for real needs, and the needs of education will always be the chief interest of the University. At the present moment the schools do not appeal to the L.C.C. except by the leave of the University. He adds that the University may claim to appoint principal teachers in the schools. It does that now. All Professors and Readers are appointed by the University, and that the Medical Schools, at any rate, appreciate this is shown by the fact that (excluding University and King's) they have now over 30 University Professors, whereas before the war there was not one. I can answer for it that a non-medical school with which I am connected will get as many University Professors as it can afford to pay. Why the Theological Colleges will be in any worse position than they are now I have no idea.

It seems to be suggested that the system of appointment of professors will be changed. Why should it?

Why Dr. Graham Little should suppose that the four members of Council appointed by the Crown, and the two members appointed by the L.C.C. will be appointed for political considerations, I do not know. Exactly the same number are appointed now to the Senate, and I never heard that accusation made of those appointments. Nor do I see what the Mayor of Chicago has to do with the question.

I am, Sir, yours faithfully,

Nov. 29th, 1926. W. P. HERRINGHAM.

THE DISSOLUTION OF INSULIN.

To the Editor of THE LANCET.

SIR,—Prof. Funk's letter in your last issue must be of great interest to all workers with insulin in this country, as it is the first account, apart from incomplete and therefore uninformed newspaper ones, of his recent new work. Unfortunately, however, his letter would appear to have suffered in the translation, because the third paragraph describing his substance is disappointingly obscure, to me at any rate. As far as I can make out, this substance A reduces the blood-sugar of normal rabbits if the fasting level is high, but has no effect or even raises the blood-sugar if the fasting level is low.

Similar results have been obtained in rabbits by Dr. Buckley and myself, working with the ordinary whole insulin (A.B.) produced commercially by The British Drug Houses. These rabbits had been poisoned by diphtheria toxin and it was found that when the fasting blood-sugar was low, insulin failed to lower it, and sometimes even raised it, but when the fasting level was high, insulin always reduced the blood-sugar to a certain extent. On some occasions also normal rabbits with A.B. insulin, one unit, gave a rise of blood-sugar similar to that produced by a small dose of adrenalin. These results obtained with whole insulin (which will shortly be published in extenso) seem to have something common with those of Prof. Funk with his substances A and B. We are advancing as an explanation of these results an abnormal metabolic condition produced by the action of diphtheria toxin on the adrenal and thyroid. We have, however, no adequate explanation to offer for the occasional rise in blood-sugar observed after insulin in normal rabbits.

I am, Sir, yours faithfully,

R. D. LAWRENCE.

Biochemical Department, King's College Hospital,
Nov. 26th, 1926.

THE PROPHYLAXIS OF POLIOMYELITIS.

To the Editor of THE LANCET.

SIR,—In the interesting leading article on poliomyelitis which appeared in your issue of Nov. 27th no reference is made to prophylaxis or treatment with hexamine (urotropine). As our investigations during the last four years on the antiseptic treatment of biliary infections show that very large doses can be administered with perfect safety, it seems advisable to draw attention to the important observations of Flexner and Clark, published in 1911, on the effects of hexamine in preventing the disease in monkeys.

"When a large dose is administered by mouth, its presence can be demonstrated in the cerebro-spinal fluid soon afterwards. We have ascertained that when the virus of poliomyelitis is injected intracerebrally in monkeys, in which the hexamine is already present in the fluid, and the drug is then administered by mouth daily afterwards, in a proportion of animals so treated . . . . the incubation period of the disease is prolonged from 6 to 8 to 24 days, and the onset of paralysis is entirely prevented."

Any attempts to prevent the disease in contacts by similar means in the past have been unlikely to meet with success owing to the relatively small dose which has to be given on account of the irritation of the bladder and hæmaturia which result from the setting free of formalin in acid urine. We have found, however, that so much as 100 gr. of hexamine can be given three times a day so long as alkalis are administered at the same time in sufficient quantity to keep the urine alkaline, as formalin cannot then be set free and the bladder is not irritated. Dr. F. A. Knott has shown that the alkali does not prevent the urotropine acting on the alkaline bile, and in view of Flexner and Clark's observations it seems unlikely that it would inhibit the action in the cerebro-spinal fluid, which is also always alkaline. I would, therefore, suggest giving these large doses to all people who have been in contact with the disease until the incubation period of 14 days has passed, and, perhaps for an additional 14 days because of the possibility that the incubation period would be lengthened by the hexamine as it is in monkeys.

Although Flexner and Clark do not appear to have made any observations as to whether hexamine prevents the full development of the symptom in monkeys when the infection is once established, it has become usual to give the drug during the acute stage of the natural disease. I would suggest that at the first suspicion of the disease being present 100 gr. should be given three times a day instead of he usual 10 or 15 gr.

A mixture containing 60 gr. each of sodium bicarbonate and potassium citrate in 1 oz. of water is given after breakfast, after tea, and after a glass of milk last thing at night. The hexamine is given at the same time, but in a different mixture so that the dose can, if necessary, be varied without altering the dose of alkali. It is, perhaps, safest to begin with 50 gr. in ½ oz. of water and add a drachm of the solution to each dose every day till the full 100 gr. in 1 oz. of water are being given. In the unusual event of bladder irritation occurring the dose of hexamine should be reduced slightly and the dose of alkali further increased.

I am, Sir, yours faithfully,

ARTHUR F. HURST.

New Lodge Clinic, Windsor Forest, Nov. 24th, 1926.

RACIAL DEGENERATION.

To the Editor of THE LANCET

SIR,—I think none who have the interests of the country at heart can have read Dean Inge's lecture on Racial Degeneration, which appeared in THE LANCET on Nov. 27th, without interest, and a sense of the importance and gravity of the indictment, suggested rather than urged, of recent social tendencies.

On the question of general social degeneration medical men, as such, have no special claim to be listened to, but it seems to me on the question of physique the profession has a right, and, indeed, a duty, to make its voice heard, if it has any reason to believe there is even the possibility of widespread deterioration. I believe that if there were a strong and influential medical demand for some sort of official commission of inquiry into the alleged existence of such deterioration and into its causes, if present, we might ultimately get an investigation and a report which would prove of value in checking the mischief.

Personally, I have little doubt, as a result of my experience during the war and since, that deterioration is going on to an alarming extent.

I am, Sir, yours faithfully,

Portsmouth, Nov. 29th, 1926. E. W. DEWEY.

To the Editor of THE LANCET.

SIR,—No doubt every reader of THE LANCET will have enjoyed Dean Inge's eloquent address—the Lloyd Roberts lecture, published on Nov. 27th. No doubt, also, they will regard his pessimistic view of the situation with apprehension, provided they consider that his deductions are based upon an accurate interpretation of existing conditions. That Dean Inge would have spoken with equal pessimism at any period of our history is ever my impression when reading his opinions. Unfortunately, like most other writers upon the welfare of our race, the Dean does not offer any remedies save those which have done duty since social problems first obtruded themselves. The only way out of the difficulty that I have met with is contained in the writings of Mr. Matthias Alexander, whose "Man's Supreme Inheritance" and "Constructive Conscious Control" I would earnestly recommend to Dean Inge as an antidote.

I am, Sir, yours faithfully,

MACLEOD YEARSLEY.

Wimpole-street, W., Nov. 29th, 1926.

THE SUPPLY OF ARTIFICIAL LIMBS.

To the Editor of THE LANCET.

SIR,—The annotation on the Adjustment of Artificial Limbs in your issue of Nov. 20th is very timely, for it is, I think, an undoubted fact that many eminent surgeons perform amputations of the limbs without enough familiarity with the conditions necessary for successful limb-fitting. It is to be hoped that your article will have widespread results in improving the practice of amputation. There is, however, another aspect of the prosthetic problem to which I should like, with your permission, to draw attention.

Early in the course of the Great War it became evident to the authorities concerned in supplying disabled soldiers with artificial limbs that the old War Office system of sending the amputee to the limb-maker and trusting to the latter to supply an appropriate prosthesis was unsatisfactory. The system at present in force under the Ministry of Pensions was therefore substituted, under which limbs are prescribed by surgeons with special experience who also supervise the training in their use and see that the end-results are the best obtainable.

From all that I have heard and observed, I am led to fear that the civilian amputee enjoys none of the advantages which this system gives to his disabled brother. It appears to be a usual practice that as soon as the stump is soundly healed the hospital patient is handed over to the almoner, who gives an order to a surgical instrument-maker who may be only a middleman as far as artificial limbs are concerned. In due course a limb is supplied, and the patient is expected to take it away and use it. Too often he finds that he cannot manage it, and (in the case of the lower limb) he reverts to crutches. Would it not be possible for the hospitals of London to combine to establish a small limb-fitting centre such as those which the Ministry of Pensions has established throughout the country, in which the prescription, fitting, and use of limbs would be carried on under experienced surgical direction?

It may be urged that this work should be undertaken by Queen Mary's Convalescent Auxiliary Hospital at Roehampton. Transport difficulties could no doubt be overcome, but I understand that the work at Roehampton is restricted to a very few firms, while there are other equally excellent limb-makers whose workshops are in London and whom it would be unfair to exclude from their share of hospital custom. I am, Sir, yours faithfully,

Seymour-street, W., Nov. 26th. E. MUIRHEAD LITTLE.

To the Editor of THE LANCET.

SIR,—We wish to correct certain statements in your annotation headed The Adjustment of Artificial Limbs published on Nov. 20th. You state that we fitted the patient with a limb which, despite many modifications, was heavier than it would have been had the stump been a different shape. This is not correct, for the limb we fitted to this patient was our standard light metal limb for below-knee amputation; it is true that we stated that had the stump been longer he would have been more comfortable and able to walk better, but the limb would not have been lighter.

We do not agree that the long stump gives no additional advantage in leverage; we have found from our long experience in fitting limbs that long stumps are better from every point of view. It is easy to understand that with a long stump you have a larger surface upon which to bear the weight of the body, giving more comfort and additional leverage, which gives the patient more walking power and stability. We claim that with a light metal limb we can fit long stumps and still make the artificial limb perfectly symmetrical with its fellow, leaving the artificial limb no heavier than would be the case with a shorter stump. Yours faithfully,

pp. Desoutter Brothers, Limited,

Baker-street, London, W., Nov. 27th. E. R. DESOUTTER.

AN INTERESTING SYNDROME.

To the Editor of THE LANCET.

SIR,—During the last three or four months a number of cases have been referred to me for electrical treatment, either on account of troublesome conditions, such as persistent backache, pains in the thighs and legs, or general debility, which present a remarkable uniformity in history, symptoms, and signs. This uniformity is so definite that I should like to give a brief account of the condition as I have met it and ask your readers whether in their practices they have had similar experiences to mine, and, if they have, whether the syndrome is well known, and, if so, what is the nature of the condition. Consideration of the clinical data at my disposal leads me to be dissatisfied, for many reasons, with the easily made, but indefinite diagnosis, of abdominal influenza.

In all the cases except two (now about 20) the patients have been males. The severity of the symptoms has always been more pronounced in those accustomed to a liberal allowance of alcohol. As regards age, the youngest case seen was a man of about 30 and the oldest one of 55.

History.—There is always a clear account of slowly increasing indefinite malaise, insufficient to disturb the daily work or to make the patient seek advice for one or two weeks. At the termination of this period matters come to a head by one or two nights either of sleeplessness or of greatly disturbed sleep.

The doctor's advice is then sought on account of:—

1. This sleeplessness.
2. Deep-seated pain or great discomfort localised to a small area just above and (usually) slightly to the right of the umbilicus.
3. Painful and excessive flatulence, worse on lying down (accompanied in two or three cases by sudden attacks of retching).
4. Extreme depression. (In two cases with strong alcoholic histories amounting to suicidal tendency.)
5. Distaste for all meats.
6. Discomfort in the muscles of the back and front of thighs, chiefly noticeable as limiting free range of movement, and quite different from the painful calf muscles of influenza.

These six symptoms are the ones referred to above as remarkably constant.

The *physical signs* are nearly equally constant. They are:—

1. Pallor of the skin, which becomes a dirty yellow colour (the patients look ill).
2. Temperature, respiration, and pulse remain normal.
3. The tongue, though not clean, is not strongly furred, but always presents the indentation of the teeth.
4. The abdomen moves well, and can be handled superficially without discomfort, except in the more acute cases; deeper pressure above the umbilicus, however, is always resented over a small area, and is accompanied by much gurgling.
5. Tests made of the sensitivity of the skin of the abdomen by means of a small electrode utilising the induced current, show a strictly localised area of definite but mild hyperalgesia approximately over the deep area of discomfort.
6. Urine, stools, barium meal and test-meal examinations in those cases that had them, yielded no information of value.
7. In the forward lying position the usual range of hyperextension of the thighs on the trunk was much limited and accompanied by a sense of deep abdominal discomfort.

In a number of cases duodenal ulcer and cholecystitis had been suspected, which indicates roughly the clinical status. These cases run a more or less "worrying" course for a week or ten days, then after an interval of a week or more, frequently relapse again and again, but each time less severely. Recovery appears to be slow and incomplete, particularly as regards the flatulence. Electrical measures during the acute stage are, from my experience, definitely contra-indicated; later, combined treatments of diathermy and ultra-violet light help materially to restore energy and abdominal comfort far better than if either of these currents are used separately.

These signs and symptoms do not correspond to any condition within my knowledge, but may be familiar to many of your readers, who could, perhaps, help me with their experience.

I am, Sir, yours faithfully,

London, W., Nov. 29th, 1926. C. B. HEALD.

THE DOG AS TEST OBJECT.

To the Editor of THE LANCET.

SIR,—In the experimental work which led to the isolation of the internal secretion of the pancreas in a form suitable for repeated subcutaneous administration to patients suffering from diabetes mellitus diabetic dogs were used as test objects for extracts made from the degenerated pancreas of the dog. The dog was greatly superior to other animals as a test object because the frequent samples of blood necessary in order to follow the blood-sugar level could be easily obtained by vena puncture by the same painless technique as is used to secure blood samples from patients. Secondly, the pancreas of the dog can be completely removed and a severe diabetes produced. The pancreas of the cat can also be removed, but it is extremely difficult to obtain blood samples from this animal. Blood samples can be easily obtained from the rabbit, but the pancreas is so diffuse that an investigator is never certain if removal has been complete. Thirdly, the signs and symptoms of diabetes in the dog have been more completely recorded than for any other species so that the beneficial effects of an antidiabetic substance could be more easily detected and more accurately estimated in this animal than in any other. It is quite probable that the antidiabetic effect of the first extracts prepared in Toronto would have been missed if a less satisfactory test animal had been used.

Since the dog was the largest laboratory animal in which it had been shown that ligation of the pancreatic ducts was followed by disappearance of the acinous tissue more pancreas was available in this species, in which to seek the elusive antidiabetic substance than in any other. Furthermore, since the most advantageous test animal was the dog it seemed probable that unnecessary difficulties would be encountered if extracts made from the tissue of a foreign species were used.

I am, Sir, yours faithfully,

C. H. BEST.

Department of Physiology, University College, Gower-street, W.C., Nov. 30th, 1926.

*** Dr. Best's letter brings up to date the memorandum issued by the Medical Research Council in 1919 and is dealt with in a leading article.—ED. L.

MEDICINE OR SURGERY FOR THE OCULIST?

To the Editor of THE LANCET.

SIR,—Mr. Ernest Clarke, in his presidential address to the Section of Ophthalmology of the Royal Society of Medicine (THE LANCET, Nov. 20th, p. 1052), has raised a topic of some general interest by his remarks on the advance in the education of the intending oculist. The facts are admirably crystallised in the paragraph:—

"In the early days the only eye work was surgical, and when the various hospitals established eye departments one of the surgeons on the staff was selected as head of that department. Naturally, the younger men who aimed at specialising in eye work concentrated on surgery, and took the Fellowship of the Royal College of Surgeons, the study for which occupied all their time to the exclusion of any deep knowledge of medicine; consequently the proportion of oculists without a special medical degree at this time was 4 *to* 1. As the knowledge of ophthalmology increased it became apparent that medicine was as important, or even more important, than surgery, so that now almost all the younger oculists possess a medical degree and the proportion is reversed."

While everyone will agree with this, the F.R.C.S. remains the indispensable key to hospital appointments, and the waste-paper basket is the receptacle for any application from a Member of the Royal College of Physicians. No doubt the possession of both these diplomas is the ideal, but if one alone is to constitute eligibility, perhaps the "Membership" might be considered more appropriate than the "Fellowship." The much closer relationship of the subject matter of ophthalmology with general medicine than with general surgery is obvious, and it seems unfortunate that Mr. Clarke should have followed up the statement I have quoted above by recalling a paper of seven years past in which it was hinted that "the time might come when some *conscious of not being good at surgery* (my italics) would concentrate on the medical side and call themselves medical ophthalmologists, with the prefix of 'Dr.' which (in London) is not considered to be our correct designation." In the spirit of this remark Mr. Clarke appears to ally himself with the regulations—obsolescent on his own showing—of the hospitals, and, indeed, to impute (which he can hardly wish to do) a motive other than a desire for efficiency to those oculists who have neglected the "Fellowship" for other qualifications.

No one will deny the status of the work done by ophthalmic surgeons in the past, but this has nothing to do with the point; to argue on this would be to confuse *post* and *propter* once more. Nor is the tremendous educational value of the primary examination for the Fellowship in question.

Shorn of irrelevancies, the question is that of "Medicine or Surgery for the Oculist." I do not propose any lowering of standards, but rather a widening of them. The advance is now chiefly in the direction of medicine. Will this be recognised by the equalisation of surgical and medical diplomas? It is to be noted, in passing, that a gynæcologist can be appointed on a medical diploma. I hope that some oculists of experience will think the subject worthy of an expression of their views. I ought to state that I have neither of the diplomas mentioned.

I am, Sir, yours faithfully,

Nov. 22nd, 1926. INCIPIENS.

AN APPEAL.

To the Editor of THE LANCET.

SIR,—A medical man, aged 70, who has no knowledge of this appeal, is sorely pressed. Twenty years ago he was advised on medical grounds to leave his general practice. His health recovered, and for many years he has been able to act as locum tenens, doing work which has kept him alive, but which has prevented him putting by. His wife, who is in indifferent health, does what she can by dressmaking. Of four sons who would now all be helping, three died at the age of 21; one, my friend, in the *Queen Mary* at Jutland; one of cerebro-spinal meningitis at St. Omer; and the other elsewhere abroad. The remaining boy is in the air branch of the Navy, and he sends home the little he can afford.

Recently a prolonged illness, lasting over four months and necessitating several operations, has prevented the doctor from earning a penny, and his financial state is critical. A friend has opened a subscription list with £50; and I, who know the facts, shall be very glad to receive, acknowledge, and forward subscriptions from sympathetic professional colleagues. Perhaps someone may know of an opening for the doctor, preferably in London, on the clerical side of a hospital or its appeal department, or of a medical or other society. He aspires only to a small living wage, and for this he would do first-rate work.—I am, Sir, yours faithfully,

HILDRED CARLILL, M.D. Camb.,
Physician to Westminster Hospital, &c.

146, Harley-street, W., Nov. 29th, 1926.

BULB DERMATITIS.

To the Editor of THE LANCET.

SIR,—In your issue of Nov. 13th you published a paper by me on the occurrence and features of dermatitis from handling flower bulbs. This article attracted the attention of the lay press, and extracts subsequently appeared in several of the daily papers. As a result, numerous requests from all parts of the country have reached me, either directly or through you, asking for details of prevention and cure.

The prevention of the distinctive peri- and hyponychial dermatitis from handling flower bulbs is

comparatively simple. Those exposing themselves to contact with bulbs should trim their nails as closely as comfort will permit. The tips of the fingers should be firmly pressed into a block of good unperfumed soap before starting work. Should irritation under and around the nail supervene in spite of these precautions, a cure may be effected by the use of an ointment consisting of equal quantities of lanoline and castor oil, applied to the affected parts. Gloves or finger-stalls should be worn at work until the cure is completed.—I am, Sir, yours faithfully,

SIBYL G. OVERTON.

Factory Department, Home Office, Whitehall,
Nov. 27th, 1926.

PROTECTIVE INOCULATION AGAINST TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—In his otherwise admirable report of the Tuberculosis Week-end Conference in your issue of Nov. 27th, your reporter has, unfortunately, misunderstood my remarks. What I said was that more than half of those exposed to known sources of tuberculous infection did not appear to suffer from it; so that if protective inoculation were advocated, it would not be easy to decide which persons were in need of it. Infection is, I believe, very frequent in childhood; but the breakdown in health comes usually much later in life, as the result of (mostly) non-tuberculous causes. My opinion is based on the study of over 2000 of my cases. I am, Sir, yours faithfully,

Farnham, Surrey, Nov. 29th, 1926. F. R. WALTERS.

EPIDEMIC ENCEPHALITIS IN DOGS.

To the Editor of THE LANCET.

SIR,—I am much interested in the suggestion made by Dr. C. O. Stallybrass in THE LANCET of Nov. 13th that encephalitis should be regarded rather as a specific disease predisposed to by distemper than as a part of distemper itself. He calls for "epidemiological or bacteriological evidence," if any be available, in favour of the latter view.

Epidemiologically it is impossible to separate distemper from encephalitis of the Sevenoaks type. The better known forms of distemper, such as the bronchisepticus or pulmonary form, as well as the more benign and transitory catarrhal form, are often followed by clonic spasms to which the name "chorea" is usually given by veterinary surgeons. Between this "chorea" and frank encephalitis every grade of nervous involvement and every sort of nervous symptom exist. It is also the case (and this perhaps is more important) that during an epidemic of distemper of the catarrhal type certain cases will be found in which the catarrhal and nervous symptoms appear at the same time. These cases, which are not uncommon, make it very difficult to accept the view that distemper acts merely by predisposing to encephalitis.

It was shown by certain workers for the Distemper Commission [1] that animals guarded by the most stringent precautions from all infections, except deliberately induced distemper, nevertheless developed encephalitis. In these cases the virus did not "breed true," although I am personally inclined to agree with Dr. Stallybrass that it commonly does so—at least within the same epidemic period. But it would not seem necessary that epidemics of encephalitis and influenza (or distemper) should ordinarily coincide, or even "regularly alternate," before we can accept them as no more than occasional phases of the type diseases. Indeed, the fact that they do not fulfil these conditions surely tells with even more force against the contention that the type disease merely predisposes to encephalitis.

I am, Sir, yours faithfully,

Sevenoaks, Nov. 16th, 1926. LESLIE PUGH.

[1] Dunkin, G. W., and Laidlaw, P. P.: Jour. Comp. Path. and Therap., 1926, vol. xxxix., Part 3.

Medical News.

UNIVERSITY OF OXFORD.—On Nov. 27th the degree of Doctor of Medicine was conferred on E. G. T. Liddell (Fellow of Trinity College) and the degree of Bachelor of Medicine on J. de la M. Savage (Wadham College).

Radcliffe Travelling Fellowship.—An examination for a Fellowship of the annual value of £300, and tenable for two years, will begin on Feb. 15th. Candidates must have passed all their examinations for the degree of Bachelor of Arts, and must have passed the last examination for the degree of Bachelor of Medicine not more than four years previously. The period of tenure of the Fellowship has to be devoted to the study of medical science and no Fellow may spend more than nine months in the whole within the United Kingdom. The principal subjects of examination are physiology, pathology, and preventive medicine, and there is a practical examination in pathology. The Fellowship is open to women.

UNIVERSITY OF LONDON.—At the recent examination for the Diploma in Psychological Medicine the following candidates were successful:—

With Special Knowledge of Psychiatry.—Rupert George Anderson, Donald Hugh Cameron, Henry Harris.
With Special Knowledge of Mental Deficiency.—Robert Melvin Macfarlane.

The Paul Philip Reitlinger Prize, offered this year for the best essay embodying the result of some research work on a medical subject carried out by the candidate, has been awarded to William Stewart Duke-Elder, M.A. St. Andrews, who is now working at University College, London, for his essay on the Ocular Circulation: its Normal Pressure Relationships and Their Physiological Significance. The prize, of the value of £30, was founded with funds given to the University by Mr. Albert Reitlinger in memory of his son, a student of Middlesex Hospital Medical School, who died on Dec. 3rd, 1911. Next year the prize will be awarded for the best essay on the Nature of Belief and its Place in Human Experience.

UNIVERSITY OF MANCHESTER.—Dr. William Dyson, Dr. D. S. Sutherland, and Dr. S. R. Wilson have been appointed members of the Board of the Faculty of Medicine.

UNIVERSITY OF GLASGOW.—On Nov. 20th the degree of M.D. was conferred on Evelyn M'Pherson for a thesis on Gastric Analyses in Cases of Diabetes and Glycosuria.

MEDICAL STUDENTS' VISIT TO A SPA.—In connexion with a scheme organised by the International Society of Medical Hydrology nearly 60 medical students and graduates of the University of Bristol visited Bath on Nov. 19th. A lecture-demonstration was given at the Royal Mineral Water Hospital by Dr. Vincent Coates, and visits were made to the various departments for physical treatment.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Thursday, Dec. 9th, at 5 P.M., Mr. L. Bathe Rawling will give a special lecture on Injuries to the Head, at the rooms of the Medical Society of London, 11, Chandos-street, W. 1. This will be free to members of the medical profession. On Dec. 6th the Infants Hospital will start a fortnight's course in Diseases of Infants. Attendance will be from 2 P.M. daily and there will be lectures, demonstrations, and two specially arranged visits on the Saturdays and one on a Sunday. The fee will be three guineas. Practical courses in Obstetrics lasting a fortnight or a month can be arranged at the Queen Charlotte's Hospital. Every week the City of London Maternity Hospital holds a course in Obstetrics and Child Welfare, personal application for which must be made to the Fellowship offices. The Fellowship can also arrange clinical assistantships at the Samaritan Hospital. The following courses will be held in January next: A fortnight's intensive course in medicine, surgery, and the specialties at the Prince of Wales's General Hospital from Jan. 10th to 22nd; a fortnight's all-day course in cardiology at the National Hospital for Diseases of the Heart from Jan. 17th to 29th, for which the entries are limited to 20; a fortnight's course in Diseases of Children at the Royal Free Hospital and the Children's Clinic from Jan. 10th to 22nd; and a month's course (Tuesday and Saturday mornings at 11 A.M.) in Psychological Medicine at the Bethlem Royal Hospital from Jan. 11th to Feb. 5th. A further series of lectures on Medical and Surgical Emergencies will be held under the auspices of the Fellowship and there will also be clinical demonstrations in ophthalmology at the Royal Eye Hospital. Copies of all syllabuses of the Special Courses, the Programme of the General Course, and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship at 1, Wimpole-street, London, W. 1.

Messrs. William Heinemann (Medical Books), Ltd., will shortly publish the fourth edition of Jacobi's "Atlas of Dermochromes," with a new and original text by Dr. Henry MacCormac. The price of the two volumes will be five guineas.

HARVEIAN SOCIETY OF LONDON.—An ordinary meeting of this society will be held at Paddington Town Hall on Thursday, Dec. 9th, at 8.30 P.M., when a discussion on the Ætiology of High Blood Pressure and the Respiratory Phenomena Associated with High Blood Pressure and Chronic Nephritis will be opened by Sir John Broadbent.

INFANT WELFARE AT LLANDUDNO.—On Nov. 26th Mr. Neville Chamberlain, the Minister of Health, opened the War Memorial Infant Welfare and Maternity Centre, the site for which has been given by Lord Mostyn. This is the first building in North Wales to be devoted to the service.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—A meeting will be held at the Miller General Hospital, Greenwich, on Friday, Dec. 10th, at 8.45 P.M., when Dr. Robert Hutchison will deliver the Purvis Oration. His subject will be Prognosis. After the oration there will be a conversazione.

OKEHAMPTON COTTAGE HOSPITAL.—The War Memorial Cottage Hospital, Okehampton, cannot yet be opened owing to the difficulty of obtaining servants. Several advertisements have failed to produce a single answer.

LIGHT DEPARTMENT AT PRESTON INFIRMARY.—On Nov. 25th Dr. Leonard Hill opened the new light department at the Preston and County of Lancaster Queen Victoria Royal Infirmary. In the course of his speech he said that for three years he had pleaded for the introduction of light treatment into schools. Everyone should have an opportunity to take light baths once or twice a week.

IRISH MEDICAL GRADUATES' ASSOCIATION.—The autumn dinner of the Irish Medical Schools and Graduates' Association was held at the Savoy Hotel, London, on Nov. 23rd. Sir William Wheeler, the President, was in the chair, and the guest of honour was Sir Thomas Moloney, lately Lord Chief Justice of Ireland. The toast of "The Guests" was proposed by Sir John Moore and responded to by Sir Thomas Moloney and Lord Shaw of Dunfermline. "The President and Association" was proposed by Dr. R. Travers Smith and Sir William Wheeler responded. Miss Ethel Ashmore, Mr. W. Gardner, "Miss Agnes Treacy" and others contributed to a delightful musical programme.

ROYAL INSTITUTION.—On Thursday, Dec. 9th, at 5.15 P.M., Sir Squire Sprigge, the Editor of THE LANCET, will deliver a lecture at the Royal Institution on Early Medical Literature. On Dec. 16th, at the same hour, he will lecture on Medical Literature in Relation to Journalism. —The Christmas course of juvenile lectures will be delivered by Prof. A. V. Hill. His subject will be Nerves and Muscles: How We Feel and Move, and the course will begin on Tuesday, Dec. 28th, at 3 P.M. The titles of the lectures are: Nerves and the Messages They Carry; Muscles and How They Move (Dec. 30th); the Heart and Some Other Muscles (Jan. 1st); the Lungs and Blood (Jan. 4th); Nerves and Muscles Working Together (Jan. 6th); and Speed, Strength, and Endurance (Jan. 8th). The lectures will be fully illustrated by experiments.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.—On Nov. 25th the following office-bearers and members of Council were elected: President: Dr. J. F. Christie. Vice-President: Dr. Thomas Fraser. Treasurer: Dr. George Rose. Secretary: Dr. H. Edgar Smith. Editor of Transactions: Mr. G. Herbert Colt. Members of Council: Dr. J. Ross Mackenzie, Mr. W. Anderson, Dr. Peter Howie, Dr. James Crombie, Mr. Andrew Fowler, Mr. Alexander Mitchell, Dr. Henry Peterkin, and Dr. George Williamson. Assistant Secretary: Dr. Robert Richards. Recording Secretary: Mr. A. Fowler.

THE LATE DR. LINTON PALMER.—After a short illness Dr. Charles John Linton Palmer died at Gosport on Nov. 19th. Educated at University College, Liverpool, Dr. Palmer qualified as M.R.C.S. in 1898 and held appointments as resident medical officer at the City Infectious Diseases Hospital, Park Hill, and at the Liverpool Royal Infirmary. He went into practice at Gosport just before the war, and was shortly afterwards appointed civilian medical officer in charge of troops in the district. Later he held a lieutenant's commission in the Royal Army Medical Corps and served on the hospital ships plying in the English Channel. Since the war he had remained in practice at Gosport and was honorary medical officer to the Royal Portsmouth and Gosport Hospital. Dr. Palmer was 55 years of age and leaves a widow and two children.

Sir Thomas Legge has tendered his resignation of the post of Senior Medical Inspector of Factories at the Home Office, finding himself unable to recede from the position which he took up at Geneva in 1921 when he voted for the Draft Convention prohibiting the use of white lead for internal painting of buildings.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—A meeting will be held at 17, Bloomsbury-square, London, W.C., on Dec. 14th at 8 P.M., when a paper will be read on the Vitamins in Their Relation to Pharmacy by Mr. F. H. Carr. After the paper a discussion will be invited. Medical friends of members and student-associates will be welcomed.

"OUR WEEK."—This is the name given to the special effort that is being made this week in celebration of the sixtieth birthday of the Elizabeth Garrett Anderson Hospital. It is hoped, by means of numerous entertainments and functions, to raise a large sum towards the fund for building and rebuilding wards and special departments.

GIFT TO A MEDICAL MAN.—A number of his friends and patients have presented an illuminated album to Dr. Price Morris, of Cadwgan, Old Colwyn, as a record of their appreciation of his medical service to the neighbourhood during almost half a century. Presentations have also been made to his wife and daughter.

GLAMORGANSHIRE HOME FOR THE MENTALLY DEFICIENT.—The Glamorganshire County Council has purchased Hensol Castle from Sir Francis Price Rose as a home for mentally deficient persons. The castle, which was one of the seats of the Earls Talbot before they inherited the Earldom of Shrewsbury, has been sold because the late owner foresees that his successors will not be in a position to maintain it.

THE LATE DR. W. C. W. STAIN.—Dr. William Corbet Stain, whose death at the age of 58 is reported from Audlem, was notable both for his work as a practitioner and his interest in local affairs. Born at Foxton in Leicestershire, he studied medicine at the University of Edinburgh, graduated in 1890, and went to Audlem 32 years ago. Soon acquiring a considerable practice, he became medical officer of health and a justice of the peace. A keen politician, he was also captain of the fire brigade and of the cricket and football clubs, a good shot, and for many years a follower of the South Cheshire and North Staffordshire Hounds. He married in 1915 a daughter of Mr. John Nunnerley, of Hankelow Manor, and she survives him.

CREMATIONS IN MANCHESTER.—At the annual meeting of the Manchester Crematorium, Ltd., on Nov. 25th the following statement by the late Lord Salvesen, of the Edinburgh Court of Session, was quoted to meet a suggestion that cremation might hinder the course of justice: "In my opinion these requirements [the Home Office Regulations] are so stringent as for all practical purposes to exclude the possibility of a body being cremated which has been the victim of foul play." Since the crematorium was opened in 1892 there have been 4622 cremations, and the number has steadily increased during the last five years.

METROPOLITAN ASYLUMS BOARD.—In connexion with the Diploma in Public Health, a three months' course of lectures and demonstrations on Clinical Practice and in Hospital Administration will be given at the North-Eastern Hospital, St. Ann's-road, Tottenham, N., by Dr. F. H. Thomson on Mondays and Wednesdays at 4.45 P.M., and alternate Saturdays at 11 A.M., beginning on Monday, Jan. 3rd. The fee of four guineas should be paid to the clerk to the Board at Victoria Embankment, E.C. 4, before attending the course.

YORKSHIRE ASSOCIATION OF GLASGOW GRADUATES. The annual dinner will be held in the Great Northern Hotel, Leeds, at 6.45 P.M. on Friday, Dec. 17th. The guest of the evening will be Mr. Farquhar Macrae. All old Glasgow graduates resident in Yorkshire are invited to the dinner, particulars of which may be had on application to the honorary secretary, W. MacAdam, M.D., 40, Park-square, Leeds.

THE LATE DR. SILAS HONEYWILL.—Dr. Honeywill, who has died at Bildeston in Suffolk at the age of 72, received his medical education at University College Hospital and qualified as M.R.C.S. Eng. and L.R.C.P. Edin. in 1876. He was for a time ophthalmic assistant at the hospital and settled in Bildeston about 46 years ago as assistant to Dr. J. L. Growse, later taking over the practice himself. At the time of his retirement in 1916 he was medical officer and public vaccinator for one of the districts of the Cosford Union and was well known throughout the district as president of the cricket club, a post which he had held for more than 40 years. Dr. Honeywill leaves a widow and a son.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

SMOKE ABATEMENT BILL.

THE consideration of the Public Health (Smoke Abatement) Bill, which has already passed through the House of Lords, has been completed by Standing Committee B of the House of Commons.

On Nov. 18th, on Clause 1, which provides that a chimney (not being the chimney of a private dwelling-house) sending forth smoke in such quantity as to be a nuisance shall be liable to be dealt with summarily, Mr. H. WILLIAMS moved an amendment restricting the application of the provision to black smoke, and requiring the Ministry of Health to prescribe the standard of the smoke. He said that after all it was impossible to burn fuel without the production of some limited amount of smoke of some kind or another, and if they were going to extend the whole present conception of smoke until it included presumably any kind of vapour which could be seen in any way at all, he thought they would land themselves in great difficulties.

Mr. N. CHAMBERLAIN (Minister of Health) in resisting the amendment, said he justified the provisions of the Bill as they stood by the Report of the Newton Committee. That Committee said that they examined 150 witnesses, who were unanimous that the limitation to black smoke should be removed. It was ridiculous, the right hon. gentleman continued, if they were going to try to limit the injury to the public health caused by the emission of noxious vapour that they should confine the provision to black smoke. It was really impracticable for any central body to prescribe a standard of this kind. The only reasonable way of meeting the difficulties was to give some discretion to the local authority or to the justices in the court.

Lieut.-Colonel FREMANTLE said that the provisions that had been put in the Bill for the protection of industry were considerable. What those who were keen from the point of view of public health in getting some measure of smoke prevention feared was that nothing would be done, just as had been in the case in the past.

The amendment was negatived.

An amendment moved by Lieut.-Colonel ASTBURY to exclude " ash grit and gritty particles " from the expression " smoke " was negatived by 23 votes to 5.

Mr. GREENWOOD moved an amendment debarring the Minister of Health from exempting by Provisional Order " any other industrial process " than the processes mentioned in Clause 1.

The amendment was negatived by 16 votes to 7.

On Nov. 23rd the Committee considered Clause 5, which extends the power to make by-laws to the provision in new buildings, other than private dwelling houses, of heating arrangements to prevent or reduce the emission of smoke.

Captain WATERHOUSE moved an amendment to include private dwelling-houses within the scope of the clause. He said that they were building so many houses nowadays that it seemed a great pity that more stringent provisions were not made to enforce the use of the very best type of grate. In Lord Newton's Report it was stated that 50 per cent. of the smoke nuisance came from private dwelling-houses. At the most under this Bill, as now drafted, they were only seeking to diminish 50 per cent. of the smoke, and he wanted to urge the Minister to diminish part of the other 50 per cent. which came from private dwelling-houses.

Lieut.-Colonel FREMANTLE supported the amendment. He said that to people who had dealt with questions of public health the urgency of this question was obvious, and they said, " For heaven's sake prevent the nuisance being set up in new buildings under new conditions and in new surroundings where possible." Local authorities, especially those who produced electricity and gas, might naturally try to promote experiments in putting up houses without any open fireplaces. He emphatically protested against any such possibility in the name of public health. A great authority at the present time on applied physiology, Dr. Leonard Hill, had recently, and again and again, spoken in regard to the present position of science as regarded heat, ventilation, and heating, and he had shown how in the enclosed systems of heating in which they promoted heat by radiation and convection, they left out entirely the better system of heating from the open fire, and left out the question of ventilation to a large extent. Be that as it might, he did not mind a few experiments being tried if only to show how unsatisfactory they were, and that the people of the country would not have such houses. He thought that it was quite possible by research to evolve a fireplace which could be put into an ordinary working-class house, and which would help to consume the smoke. When that had been proved, it would be an excellent thing to have an amending Bill which would enable the far-sighted local authorities to institute by-laws and to insist that such improved appliances should be applied to all new houses.

Mr. CHAMBERLAIN reminded the Committee that there were 8,000,000 houses existing in the country at present, and not one of these would be touched. All that they would deal with under the amendment were the new houses of the future which were being built at the rate of 200,000 a year. As a matter of fact, they would not even deal with the whole of these houses, because a substantial part of them were being built by local authorities, and there was nothing to prevent them from so constructing their houses that they were fitted with such arrangements as would prevent the emission of smoke.

The amendment was negatived by 18 votes to 7.

On Nov. 24th the Committee amended Clause 9 (which excluded ships from the operation of the Bill), so as to make the Bill apply to ships other than those " habitually used " as sea-going vessels.

A new clause (powers of local authorities to conduct research) was added to the Bill.

The Committee stage was concluded, and the Bill was ordered to be reported to the House.

HOUSE OF LORDS.

THURSDAY, NOV. 25TH.

Lead Paint Poisoning Bill.

ON the motion for the third reading of the Lead Paint (Protection against Poisoning) Bill,

Viscount BERTIE OF THAME moved an amendment exempting from the prohibition provided by the Bill such women as are actually employed in painting at the time of the passing of the Act.

Lord DESBOROUGH, on behalf of the Home Office, accepted the amendment, which was agreed to.

The Bill was read a third time and passed.

Poor-law Bill.

Viscount GAGE, in moving the second reading of the Poor-law Bill, said it was not a measure for the Reform of the Poor-law, but a Bill to consolidate the various enactments relating to the subject of the Poor-law. At present they were to be found in about 100 Acts of Parliament ranging from the Poor Relief Act of Queen Elizabeth's day to modern times. It was proposed to repeal some 60 Acts of Parliament and to repeal in part about 40 others. The general effect of the Bill would be to replace about 220 pages of the Statutes Revised, many of which represented pre-Victorian legislation, and were archaic in form, by an Act of 140 pages couched in modern language and arranged in modern form. In the opinion of the Government it would be impossible satisfactorily to discuss Poor-law Reform by the light of the existing enactments, and that an attempt should be made to reduce the existing Poor-laws to a single code, which would be readily available to all persons interested, and from which the scope and effect of the changes proposed could easily be seen. If the Bill received a second reading, he would propose that it be sent to the Joint Committee on Consolidation Bills.

The Bill was read a second time, and referred to the Join Committee on Consolidation Bills.

HOUSE OF COMMONS.

WEDNESDAY, NOV. 24TH.

Nurses' Hours at West Ham Infirmary.

Miss LAWRENCE asked the Minister of Health the hours per week and the length of shift worked by the nurses and sick attendants at the West Ham central infirmary at the present time, and the hours and shifts worked prior to the establishment of the present appointed board of guardians.—Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied: Prior to the appointment of the present Board the hours worked by these officers were 48 a week; they are now 56. Attendants in the observation wards continue to work 48 hours a week. The daily shifts for nurses were 10 hours, and have not been changed; for sick attendants the shifts were eight hours without a break, and are now 10 hours, but under the present system the longest time worked without a break is 4½ hours.

Dog-stealing and Medical Research.

Captain ARTHUR EVANS asked the Home Secretary if his attention had been drawn to the case of a man convicted of stealing dogs for the purpose of selling them to the University College School of Physiology; what action the College authorities took in order to see that stolen animals were not bought; what were the nature of the experiments carried on by this College; and what steps were taken to see that unnecessary cruelty was not practised.

Captain PETER MACDONALD asked the Home Secretary whether his attention had been called to a case of dog-

stealing in London and to the remarks of the magistrate with respect to receiving; whether the police had investigated the procedure under which these animals were collected and disposed of to medical schools; and whether he would consider legislation compelling institutions thus purchasing dogs to keep an inventory of acquisitions, with the prices and names of all vendors, such inventory to be open to police inspection.—Sir W. JOYNSON-HICKS replied: I have seen a press report of the case in question. The College authorities have since stated publicly that their procedure is to buy the animals when required from a general dealer in animals and animals' food, and to require from him a written guarantee that all the animals so purchased were legitimately obtained. The experiments carried on at the College are for the purpose of medical and scientific research and are subject to the conditions and restrictions laid down by the Act 39 and 40 Vic., cap. 77. The laboratory is inspected at frequent intervals by the inspectors appointed under that Act.

Sir ROBERT GOWER asked the Home Secretary whether he would consider the desirability of introducing legislation making it obligatory for persons dealing in dogs, cats, and similar live animals to take out a licence for the purpose and to keep a record of how such animals had been obtained and to whom sold, and providing that these records should be open to regular inspection.—Sir W. JOYNSON-HICKS replied: I do not think that legislation of the kind suggested would be practicable, and I see no reason to doubt that provisions of the ordinary law of larceny are sufficient to deal with thefts of animals.

Sir ROBERT GOWER asked the Home Secretary whether his attention had been called to the comments made on Nov. 20th by Mr. Fry, the stipendiary magistrate at Bow-street police-court, when sentencing Henry William Hewitt, who was, according to the police evidence, employed by the University College Hospital School of Physiology to supply animals for vivisectional experiments and against whom there was a previous conviction for dog-stealing, for stealing and ill-treating certain dogs intended by him for sale to such school; and whether he would consider the desirability of causing an inquiry to be made into the methods by which dogs and other animals were obtained for the purpose of vivisectional experiments in physiological schools.—Sir W. JOYNSON-HICKS replied: Yes, Sir; and I have received a communication from the responsible authorities of the school containing information as to the procedure adopted by them in the purchase of animals, which I understand was not before the magistrate when he dealt with the case. I see in the morning's newspapers that the College has appointed a committee to inquire into the matter. Apart from this case no complaints have reached me, and at present I see no necessity for a general inquiry.

Condition of Casual Wards in Winchester.

Mr. WALTER BAKER asked the Minister of Health whether his attention had been called to the fact that the Winchester Board of Guardians publicly declared their refusal to comply with the requirements of his Inspector to make their casual wards fit for human habitation; whether they had since satisfied the Inspector; and, if not, what steps would be taken.—Sir KINGSLEY WOOD replied: Yes, Sir. My right hon. friend had made further representations to the guardians, and he understands that they have now reconsidered their position and are preparing proposals for the improvement of their wards. The matter will continue to receive his close attention.

Cow Milkers and Disease.

Mr. GROVES asked the Minister of Health whether he would consider the desirability of amending Clause 16 of the Milk and Dairies Order so as to prevent any person engaging in the milking of cows who was suffering from cow-pox, tuberculosis, venereal disease, or skin diseases generally.—Mr. NEVILLE CHAMBERLAIN replied: The prevention of Tuberculosis Regulations, 1925, contain provisions for preventing any person who is suffering from tuberculosis of the respiratory tract from milking cows. I am advised that there is no evidence that the other diseases mentioned are likely to be transmitted to consumers through the medium of milk, and consequently I do not at present propose to modify the Order in the sense suggested.

THURSDAY, NOV. 25TH.

Naval Ratings and Tuberculosis.

Mr. HORE-BELISHA asked the First Lord of the Admiralty the number of men invalided from the Navy with pulmonary tuberculosis during the year 1925; and the number of these whose disease was claimed not to be attributable to the service.—Mr. BRIDGEMAN replied: The number of men invalided from the Royal Navy and Royal Marines with pulmonary tuberculosis during the year 1925 was 189. The number of these whose disease was considered not to be attributable to the Service was 187. It is believed that a certain number of these 187 men claimed disability pensions from the Ministry of Pensions on the ground that the invaliding disability was attributable to War Service. The results of these claims are not known at the Admiralty.

Sir BERTRAM FALLE asked the First Lord of the Admiralty the number of naval ratings borne during the financial year 1913–14; and the number invalided with tuberculosis, also for the financial years 1921–22 and 1924–25.—Mr. DAVIDSON replied: The number of naval ratings and Royal Marines invalided with tuberculosis during the three years in question were 192, 235, and 179 respectively. The average numbers borne were 130,490, 110,823, and 90,527 respectively.

The Factory Bill.

Mr. ROBINSON asked the Home Secretary when it was proposed to take the Second Reading of the Factory Bill.—Sir W. JOYNSON-HICKS replied: The Bill has been withdrawn for this session. As I explained in the Memorandum on the Bill (Cmd. 2716), and also in the course of the debate on March 26th last on the second reading of the Factories Bill introduced by a private member, the Government Bill was introduced in order to give the different industries affected the opportunity during the autumn and winter of examining the proposals, of consulting among themselves with a view to arriving at agreements on disputed points, and of submitting any representations they desire to the Government. It was not proposed to proceed further with the Bill during the present session.

Approved Societies and Dentists' Fees.

Colonel APPLIN asked the Minister of Health whether he was aware that certain approved societies had refused to pay dentists the new regulation fees; and what steps he proposed to take to bring these approved societies into line with the majority.—Mr. NEVILLE CHAMBERLAIN replied: The new scale of fees for dental treatment has not been laid down by regulations, but has been arrived at by agreement between representatives of approved societies and the dental profession. I am aware that a few societies have not yet adopted the scale. I am watching the position, and in the event of its becoming clear that the adoption of the scale by the society is essential to the provision of a satisfactory service for its members, I will take such steps as are necessary to deal with the matter.

Government and Poor-law Reform.

Mr. BENJAMIN SMITH asked the Minister of Health whether it was proposed to lay upon the Table particulars of the Government proposals for the amendment of the Poor-law.—Mr. NEVILLE CHAMBERLAIN replied: No, Sir. A provisional scheme has been published and criticism upon it has been invited from the various bodies interested; the question whether further proposals framed in the light of this criticism shall be made public in the same way is under consideration.

Infantile Paralysis at Uppingham School.

Captain FAIRFAX asked the Minister of Health the extent of the outbreak of infantile paralysis at Uppingham School; and whether any other public school had been attacked by this epidemic.—Mr. NEVILLE CHAMBERLAIN replied: According to the information in the possession of my department, this outbreak was limited to two cases, one of which proved fatal, but a third boy is reported to have developed the disease after his return home. The answer to the last part of the question is, as far as my information goes, in the negative.

MONDAY, NOV. 29TH.

BIRTHS AND DEATHS REGISTRATION BILL.

The Births and Deaths Registration Bill, as amended in Standing Committee, was considered on Report.

Mr. PETO moved the following new clause:—

"The death of any person shall not be registered unless and until there has been delivered to the registrar of the district in which such death has occurred a certificate signed by a medical practitioner of the fact of death and of the cause of death, as respectively in this Act defined, and such certificate shall be given only after the medical practitioner has seen the body."

He said that the Bill provided no machinery for the inspection of a body after death, and there was urgent need of it. There could be no disposal of the body without a registrar's certificate, but that certificate only stated that the registrar had registered the death. It was not worth while just for that to pass the Bill and incur all the public expense which this new machinery would involve. He hoped that the Parliamentary Secretary to the Ministry of Health would give an assurance that his department possessed powers to put an end to the present unsatisfactory state of affairs, and that a very large number of people supposed to be dead should not be in danger of immediate

burial, but that the fact that they were really dead should be certified by a medical man who had seen the body.

Mr. GROVES, in seconding the new clause, said that there was a growing interest in this question. There ought to be actual supervision of the dead and verification by a medical man before interment took place. It was announced by the Registrar-General that only 40 per cent. of the people buried in this country were certified on medical evidence to be actually dead. That was a very unsatisfactory state of affairs. There had been glaring instances where actual funerals had been commenced, in a sense, before death had taken place. He read a letter from an undertaker in Hull who stated that he was called to measure the body of a woman a few weeks ago, who had been laid out, and was said to have been dead for some hours. While at the bedside he noticed a slight movement of the fingers and eyelids, and a doctor was sent for. After his examination, the undertaker was told that his services would not be required. The woman actually died that evening. That was an isolated case, but it proved that there was something in this question. The whole matter was one of expense. The Government could not find the money to do what was required, and medical men would not do it without payment. After all, the panel doctor was responsible for his panel patient until life was extinct, and it ought to be his duty to certify that life was actually extinct after seeing the body. A similar set of circumstances should obtain in Poor-law institutions and hospitals. Where private families had their own doctors there would be no difficulty in the medical man paying an additional visit after death. The new clause gave the Government an opportunity to make the necessary representations to the British Medical Council seriously to consider the matter and to see if this long-standing grievance could not be brought to an end.

Lieut.-Colonel FREMANTLE said that this amendment was an alternative to that which he had put down, which was originally a specific clause in the Bill with which he was personally associated. In the Bills he had introduced in previous years on this subject, his aim had been to meet the particular objections put forward by Mr. Peto. He wished to satisfy those who feared that there was a danger of being buried alive, and he went into the matter very thoroughly and intimately with those concerned to see what could be done. The stage which Mr. Peto and his friends had reached was one he (Lieut.-Colonel Fremantle) had passed through with many others, but his hon. friends had not gone so deeply into the details. This matter was not merely one of expense; the real question was that it was impracticable from the point of view of the doctor's time. That argument really met what appeared, at first sight, to be the appalling statement that only 40 per cent. of deaths were certified after a personal view of the body by the doctor. If they referred to the experience of their own lives they could understand that if the doctor was visiting a patient regularly, over and over again, and the patient was gradually going downhill, the doctor could not be there, and had no cause to be there, every minute right up to the very last. The doctor saw the end coming, and he naturally discreetly retired. He would call in the course of his round, and he retired when there could be no question about the end in any case. Of the 60 per cent. of deaths certified without actual view of the body, they might take it that in practically every one of them the doctor was quite assured in his own mind, when he signed the certificate, that death had supervened, and was bound to do so. There might be a case of error here and there, but they should look at the doctor's practice. In ordinary practice, the doctor was busy on his round from the time he had finished his morning surgery until the evening. He had often no time for his meals, which as a rule were scratch meals. His was a "scratch" life, and every now and then he took what he could in the way of an hour off, which he enjoyed thoroughly. Members of the Labour Party were constantly raising the question of panel doctors having too many patients on their panel, while others were not sufficiently occupied. He admitted that the proposal would give greater confidence to the public, but it was impracticable for the simple reason that there were only a certain number of doctors in this country and, in a very large number of areas, they were occupied for practically the whole of their time. If this extra duty were thrown on the doctors, they would undertake it, but it would be at the expense of their other patients. It was a question of proportion. The only way to meet the case was that suggested in an amendment of which he had given notice. That amendment suggested that after consultation with the Government department, a special officer might be appointed for this special purpose. His amendment proposed that the county boroughs might, where they wished, appoint a special officer, and no doubt some of the boroughs—the L.C.C. would have done so—would have appointed a man who would have helped materially in the worst cases. That would have been a trial experiment of incalculable value, and he was very sorry that the Society that had this fear of premature burial did not accept this half-measure, but went out for the whole proposal in Mr. Peto's amendment. As so often happened, in aiming at the impracticable the Society had lost the half loaf which he had offered.

Dr. VERNON DAVIES said that he had not the slightest hesitation in saying that so far as the towns were concerned and the districts near towns, the proposal that the doctor should see the body after death was perfectly feasible. In 23 years' practice he had only failed once to see a patient after death. In the case of the country districts the matter was not so easy, as a doctor might have to come 20 miles to see a body. If something could be done to meet the case of the country areas he would be prepared to support the proposal.

Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) said that under the Act of 1874 a doctor in attendance on a deceased person in his last illness was required to give a certificate as to the cause of death to the best of his knowledge and belief. If there was no medical certificate, the registrar referred the question at once to the coroner, and if the death was due to an accident, an industrial disease, or other cause which was appropriate for consideration by the coroner, the registrar referred it to the coroner for registration. The certificate was thus even under present circumstances an important element in the evidence determining how the case was to be treated. A doctor was not required to see the deceased person after death, nor was it essential for the purposes of a certificate that he should do so. In ordinary cases where he had attended the deceased until shortly before death, and was informed by a relative that death had taken place, that knowledge would enable him to certify the cause of death, provided the cause of death was consistent with the opinion he had formed of the disease which was the cause of death. Hon. Members had urged that an inspection of the body should take place in every case by a medical man before a certificate was given. It would be a great pity to imperil the very useful provisions of this Bill, which had been supported by all parties, because of a question of this kind, and under those circumstances they had considered what steps could be taken to meet the views of his hon. friends and others who felt strongly on this matter. It was true that in about 40 per cent. of cases the doctors did see the deceased after death, but the difficulty of meeting the situation was very largely experienced in the rural areas. It was very difficult to impose not only on medical men but on the families of the deceased persons charges and expenses which in many cases they would resent. Therefore he suggested that the case might be met by the Registrar-General's office extending the system of the reference by registrars to coroners on the facts as disclosed by the medical certificate of the cause of death. If that policy was pursued, as they intended that it should be, the certificate would show whether the doctor had seen the deceased after death, and how long before death he last saw him alive; and it would thus be possible to see that any case not seen after death, or a reasonably short period before death, would come under review by the coroner before registration or burial. It was to be anticipated that this arrangement in addition to bringing a large class of the more doubtful cases under special review, would greatly increase the proportion of cases seen by a doctor after death, and the improvement in that respect would be progressive to the extent of reaching by stages a standard which even Mr. Peto might regard as satisfactory. In order that the progress and success of this course of action might be properly watched, the Registrar-General would obtain statistics showing the proportion of deaths certified by doctors who had seen the deceased after death, and he (Sir K. Wood) would undertake that these figures should be published in the Registrar-General's annual publication. The Minister of Health was also prepared to say that if the result of the action now proposed was ineffective, he would be prepared to reconsider the whole question with a view to securing the object which they had in common by other means, either by executive or legislative action.

Mr. PETO withdrew his new clause.

The Report stage of the Bill was completed.

Sir KINGSLEY WOOD moved an amendment to provide that the Bill should come into operation on July 1st instead of Jan. 1st. He said that this was necessary in order to allow certain arrangements to be made.

The amendment was agreed to.

On the motion that the Bill be read a third time,

Mr. GROVES, in supporting the Third Reading, repeated his plea that panel doctors should view the body before certification.

Lieut.-Colonel FREMANTLE thanked the Ministry of Health and the House for supporting the Bill. He said that the feature of it which would be found most useful would be the notification of still-births.

The Bill was read a third time.

MENTAL DEFICIENCY BILL.

Mr. NEVILLE CHAMBERLAIN, Minister of Health, in moving the second reading of the Mental Deficiency Bill (which has already passed through the House of Lords), said that it was a measure which was urgently required in the interests of mental defectives themselves. The real substance of the Bill was to be found in the first clause which extended the definition of defectives. Hitherto they had found themselves limited and to some extent cramped in dealing with mental defective cases which were not defective from birth or early age. There had been some extremely painful and distressing cases of encephalitis lethargica in which most serious changes had taken place, but as the boy or girl was not of an early age, he or she could not be dealt with under the existing law. The Bill had been altered so that cases could be dealt with in which the mental deficiency was due to disease, injury, or other causes. Although the existing Act authorised combination of local authorities, it did not enable the local authority to provide additional beds which could be lent to other authorities, but Clause 6 of this Bill provided for such procedure and enabled the local mental deficiency authority, and the local education authority who had responsibility for certain classes of defectives of school age, to provide an institution jointly. He hoped that mutual arrangements would be come to whereby the best use would be made of the provisions of this Bill, which had the unqualified support of the Central Association for Mental Welfare, which comprised 50 voluntary associations throughout the country. The measure did not interfere in any way with the safeguards in the Mental Deficiency Act. They all recognised the strong public anxiety that people should not be treated as mental defectives without sufficient cause. A mental defective might only be dealt with by Order if in addition to being a mental defective he was found "neglected, abandoned, or without visible means of support, or cruelly treated; if he is found guilty of some criminal offence, or if he is undergoing imprisonment, or is an habitual drunkard within the meaning of the Inebriates Act; if he is notified by the local education authority as a mental defective needing care and control; or in the case of a woman, if she is in receipt of poor relief at the time of giving birth to an illegitimate child." In addition to these general limitations, there were the following further safeguards. There must be two medical certificates, one of which must be signed by a medical practitioner specially approved for the purpose, and the case then came before a judicial authority. The judicial authority must be satisfied that the person was a defective and that he was a subject to be dealt with under the Act for one or other of the reasons mentioned above; and then the judicial authority was only empowered to make an Order if he thought it desirable to do so in the interests of the defective. All these safeguards applied before the case was sent to an institution for care and treatment. At the end of a year special medical and other reports had to be made on each case and forwarded to the Board of Control. If the Board, after considering these reports and the means of care and supervision which would be available if the defective were discharged, came to the conclusion that the continuance of the Order was required in the defective's interest, they might order continued detention in the institution for a further year. The same procedure was followed at the end of succeeding periods of five years each. In the case of a defective under the age of 21 there was the further safeguard—namely, that the visitors might, when the case arrived at the age of 21, discharge the defective if they thought that his detention was no longer required in his own interest. All defectives detained under the Mental Deficiency Act were visited by members of the Board of Control from time to time. If at any time the Board felt that any particular defective could with advantage to himself and without danger to the public be discharged, they had power to discharge him. As the existing safeguards were not diminished, he put it to the House that ample safeguards were already provided to see that no injustice or miscarriage of the beneficent provisions of this Bill should take place.

Mr. RHYS DAVIES moved the rejection of the Bill. He said that no one on the Opposition side of the House wished to prevent the Minister of Health from dealing with the consequences of that terrible disease, sleepy sickness. When, however, this Bill was introduced in the House of Lords, the only substantial reason given by the mover was that the Ministry of Health had consulted some medical experts on the subject of widening the scope of the Act of 1913. The question was much too big to be settled by medical experts alone. Up to 1913, as he understood, the doors of mental institutions were as wide open as the Minister of Health now wished to make them for placing people in these institutions, but because of an agitation throughout the country against putting people away in such institutions who ought never to be there, an Act was passed limiting the number of cases, and specifying what type of case was to be dealt with. The Minister by this Bill was going to destroy practically all the main provisions of the Act of 1913. This Bill was not confined to children; it opened the door so that anyone of any age might be dealt with. Having studied the Report of the Royal Commission on Lunacy, he could see no indication in the recommendations with regard to this point. Surely, if the Royal Commission had thought that an amendment of the law on these lines was desirable, they would have made a recommendation on the matter. Again, a committee had recently submitted a report on the question of sexual offences against young persons. In that report, however, there was a definite recommendation that this change should be made. Another committee on Juvenile Offences was still deliberating, and he thought that it was very unwise to bring in a Bill of this kind before the reports of all these committees had been considered by the Government.

Mr. R. MORRISON seconded the motion for rejection.

Commander WILLIAMS said that if the Bill was to have a second reading the House ought to have some sort of explanation as to how far it was intended to carry it, and whether the burdens were going to be mainly on the taxpayer or on the ratepayer. Was it likely to mean an enlargement of the present institutions and staff? If they had not sufficient staff and sufficient institutions, it was not very useful to try to enlarge the number of people they were going to take in.

Mr. AMMON said that he was a little concerned about the classification of encephalitis lethargica cases, which were not what were known medically as mental defectives. Magistrates and judges who had had cases of this kind before them had deplored the fact that they had either to make criminals of the persons charged or to send them to asylums as mental defectives. Some accommodation should be provided for such cases. Under this Bill there was no guarantee that any special care would be given to these people.

Sir KINGSLEY WOOD said that taking the cases throughout the country there was not sufficient accommodation at present, but this Bill would enable the accommodation which at present existed to be more usefully employed. Mr. Rhys Davies was not quite correct when he said that they were destroying the main provisions of the Act of 1913, because prior to that Act there was no power in this country to deal with mental defectives at all. It was quite true that in certain respects they were opening the door by this Bill, and it was very necessary that the door should be opened. In their latest report the Board of Control, after referring to the number of cases which had unhappily arisen in this connexion, said: "There are certain legal difficulties of bringing some defectives of this class under the Mental Deficiency Act, though they are clearly in need of the care and control for their protection which would be provided under that Act." They needed more of the hospital spirit in the treatment of these unfortunate people, and under this Bill the treatment was firstly, supervision, secondly, guardianship, and thirdly, institutional care. The definition in the Bill had been very carefully settled by many eminent medical men whom they had called into consultation, with a view to arriving at something that would meet all classes of cases which ought to be treated. No financial resolution was required for this Bill; therefore, as far as the taxes were concerned, they were not making any further demand on the community. But the measure might very well call for further assistance from the rates. In the long run, whatever might be the immediate expense, it would be better both for the rates and the taxes that this Bill should be passed.

Sir H. SLESSER said that the Bill introduced an entirely new class of persons into the category of mental defectives. Before 1913 there was no such creature known to the law as a mental defective; then, after great discussion the definition of the 1913 Act was set up, and the description was limited to persons who were mentally defective from birth or an early age. Now they had an entirely new proposition, which was that the term should include anybody of any age who happened by injury, disease, or other cause to become what a doctor considered to be a mental defective, and what a magistrate or a court was prepared to certify as such under the terms of the measure.

Mr. CHAMBERLAIN said that he thought that the hon. and learned Member was under a misapprehension. The words used were "development of mind," and development of mind only took place before adult age, and therefore the definition was really limited.

Sir H. SLESSER said he could not accept that view. The Bill dealt with every "disease, injury, or other cause," and who knew where this thing would end? He wanted to be sure that at any rate someone had made a protest that this was a dangerous course on which they were embarking on insufficient information.

Dr. VERNON DAVIES said he was not sure whether he understood the Minister when he referred to the case of encephalitis lethargica to refer to elderly people. The Bill referred to a condition of arrested or incomplete development of mind. A man of 50 who got encephalitis lethargica

and developed some of these awful symptoms afterwards was not necessarily suffering from arrested or incomplete development. It was a perverted development, and the great benefit of this Bill was that it enabled them to take charge of these sad cases. It was just as important that a man of 60 or 70 years of age should be under control after this disease as a child of 9 or 10. He would like to be quite certain whether people of all ages could be included under the Bill. He should also like, before the Committee stage, to see if they could not introduce the words " or perverted " into the definition of mental defectives, because arrested or incomplete development was not sufficient.

Captain W. BENN asked the Minister of Health whether the Bill applied only to adolescents or to persons of all ages.

Mr. CHAMBERLAIN said that Dr. Davies had confirmed his view that the Bill as it stood did not deal with people suffering from perverted development. He took it that the hon. Member thought it might arise where a person had arrived at a later age. That was a point which must be considered in Committee. As far as his own view was concerned, clearly it was impossible at present to deal with all ages; it was only possible to deal with those mental defectives whose development had been arrested, or rendered incomplete by one of the causes specified.

Lieut.-Colonel FREMANTLE said he had had the privilege of serving on committees with the experts who drew up the definition, or something like it, and submitted it to the Ministry of Health. It was quite clear in their mind that they wished only to extend the definition to adolescents, and not to extend it to later ages. They did not consider these cases sufficiently numerous to require the definition to extend to them. But even the most learned experts of the medical profession were liable to err in their definitions.

Mr. RHYS DAVIES withdrew his motion for rejection.

The Bill was read a second time and committed to a Standing Committee.

Milk Regulations and Imported Milk.

Brigadier-General CLIFTON BROWN asked the Minister of Health whether milk produced in Ireland, the Channel Islands, and the Isle of Man would come under the Public Health (Imported Milk) Regulations, 1926, or under the Milk and Dairies Order, 1926, for England; and, if it came under the latter, what steps were to be taken to see that the Order was carried out in the above-named countries.—Sir KINGSLEY WOOD replied: Milk brought from Ireland, the Channel Islands, and the Isle of Man will not come under either the Public Health (Imported Milk) Regulations or the Milk and Dairies Order.

TUESDAY, NOV. 30TH.

Smoke Nuisance at Palace of Westminster.

Mr. BENJAMIN SMITH asked the Under Secretary of State for the Home Department, as representing the First Commissioner of Works, whether his attention had been called to the volumes of black smoke issuing from the smoke-stack of the Palace of Westminster between the hours of 10 and 11 A.M.; whether any complaints had been received from St. Thomas's Hospital; and whether any summons from the local authority had been received for the abatement of the nuisance caused.—Captain HACKING replied: As regards the first part of the question, the attention of my right hon. friend has been called to this nuisance, which is due to the use of foreign coal, and it is hoped that an improvement will be effected when we are able to revert to the use of Welsh coal. The answer to the second and third parts of the question is in the negative.

Ventilation Experiment in Postal Tube.

Mr. THURTLE asked the Secretary of State for War if he could make a statement as to the object of the recent action of his department in sending a company of soldiers into the London postal tube and keeping them there for a number of hours.—Sir L. WORTHINGTON-EVANS replied: The experiment was designed to furnish data regarding the ventilation required under certain conditions in underground shelters, such as dug-outs.

THE LATE DR. J. H. REYNOLDS.—Dr. Joseph Henry Reynolds, who died on Nov. 12th, had worked in Fulham for nearly a quarter of a century and had built up a large practice in the district. He was a son of the late Mr. James Reynolds and was born in 1870 at Gloucester, where he was educated at the Crypt Grammar School. He went to London as a student at the Middlesex Hospital and graduated M.B., C.M. in the University of Edinburgh in 1896. He then held a series of house appointments at the Edinburgh Royal Infirmary and at the Miller Hospital, Greenwich, later becoming assistant medical superintendent at the Brentford Union Infirmary. At his death Dr. Reynolds was 56 years of age. He married a daughter of the late Lieut.-Colonel R. A. V. Pope, and she survives him.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY, Dec. 7th.—8.30 P.M., PATHOLOGY. Laboratory Meeting in the Inoculation Department, St. Mary's Hospital, Paddington, W. Communications, &c.: Sir Almroth Wright: New Technique for Measuring the Bactericidal Power of Blood. V. D. Allison and A. Fleming: Some Experiments on Lysozyme. E. W. Todd: Observations on the Virulence of Hæmolytic Streptococci. J. Freeman and D. M. E. Thomas: Reaction of the Guinea-Pig Uterus to Pollen. A. Fleming and I. Maclean: Toxic Granules in Leucocytes. W. Newcome: Recent Pathological Specimens. 8.30 P.M. ORTHOPÆDICS. Discussion: The Treatment and Results of Fracture of the Upper End of the Femur in Adults (excluding the shaft). Mr. S. L. Higgs will read the opening paper. Other speakers: Prof. Noordenbos (of Amsterdam), Sir Charters Symonds, Mr. T. H. Openshaw, Mr. Hey Groves, Mr. R. C. Elmslie, Mr. Magnus Redding, Mr. E. M. Cowell, Mr. Rowley Bristow, Mr. H. A. T. Fairbank, Mr. A. H. Todd.

THURSDAY.—8.30 P.M., NEUROLOGY. Mr. Macdonald Critchley: Mirror Writing and its Significance. STUDY OF DISEASE IN CHILDREN AND PSYCHIATRY: Members of these Sections are invited to attend this meeting and take part in the discussion.

FRIDAY.—5.30 P.M., CLINICAL. (Cases at 5 P.M.) Cases: Mr. P. Turner: A Case of Old Osteomyelitis of Astragalus. Dr. Worster-Drought: Two Cases of Serratus Magnus Paralysis. Mr. A. E. Mortimer Woolf: (1) Lymphangioma of Tongue; (2) Hæmangioma of Tongue. Dr. L. S. T. Burrell: A Case of Acrocyanosis. Mr. E. Pearce Gould: Sebaceous Horn of the Cheek. Dr. Bedford: Two Cases of Aneurysmal Dilatation of Left Auricle (with mitral stenosis). Mr. W. H. Ogilvie: A Case of Infantile Paralysis with Sexual Precocity. Dr. Parkes Weber (with Dr. Gunewardene): Lipodystrophia Progressiva, with Face only Affected. Mr. L. R. Broster: Ulcer of the Hand for Diagnosis. 5 P.M., OPHTHALMOLOGY. Clinical Meeting at the Central London Ophthalmic Hospital.

BIOCHEMICAL SOCIETY.

MONDAY, Dec. 6th.—5 P.M. (in the Biochemical Laboratory, Imperial College of Science and Technology, South Kensington). Communications: Dr. Krestin and J. R. Marrack: The Calcium in Body Fluids in Nephritis. D. Jordan Lloyd: The Mutual Influence of pH and Salt Concentration on Protein Swelling. C. R. Harington and G. Barger: Chemistry of Thyroxin. III. Constitution and Synthesis of Thyroxin. H. W. Buston and S. B. Schryver: The Basic Hydrolysis Products of Gelatine. I. M. Heilbron, E. D. Kamm, and R. A. Morton: Absorption Spectra of Cholesterol and its Possible Biological Significance with Reference to Vitamin D. O. Rosenheim and T. A. Webster: Further Observations on the Photochemical Formation of Vitamin D. A Demonstration of Methods Employed for Purifying and Investigating the Proteins (Electro-dialysis, &c.) will be given.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

THURSDAY, Dec. 9th.—8.15 P.M., preceded at 7.45 P.M. by a demonstration on Some Tropical Liver Infections. Dr. H. S. Stannus: Tropical Neurasthenia.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, Dec. 6th, to SATURDAY, Dec. 11th.—FELLOWSHIP OF MEDICINE. Special Lecture at the Medical Society, 11, Chandos-street, W. Thurs., Dec. 9th, at 5 P.M., Mr. L. Bathe Rawling: On Injuries of the Head. Free to all members of the medical profession.—INFANTS HOSPITAL, Vincent-square, S.W. Special course on Diseases of Infants. Every afternoon from 2 P.M. Special Lectures and Demonstrations. Sat., Visit to the model pasteurising plant, Willesden.—ST. JOHN'S HOSPITAL, Leicester-square, W.C. Last week of Special Course in Dermatology.—WEST END HOSPITAL FOR NERVOUS DISEASES, Welbeck-street, W. Last fortnight of Special Course of Lecture-Demonstrations upon selected neurological cases. Every afternoon at 5 P.M. Further information from the Secretary.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY, Dec. 6th.—10 A.M., Surgical Clinic. 2 P.M., Medical Cases in the Wards. 2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.

TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.

WEDNESDAY.—2.30 P.M. to 5 P.M., Medical Skin and Eye Clinics. Operations.

THURSDAY.—11.30 A.M., Dental Clinic. 2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose, and Throat Clinics. Operations.

FRIDAY.—10.30 A.M., Throat, Nose, and Ear Clinics. 2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.

On Thursday, Dec. 9th, at 2.30 P.M., there will be a special demonstration of Surgical Cases by Mr. W. C. Tanner.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.

MONDAY, Dec. 6th.—10 A.M., Mr. MacDonald: Genito-Urinary Operations. 12 noon, Mr. Simmonds: Fractures and Applied Anatomy. 2 P.M., Mr. Donald Armour: Operations.

TUESDAY.—10 A.M., Medical Registrar: Clinical Methods. 12 noon, Dr. Burrell: Chest Cases. 2 P.M., Mr. Sinclair: Surgical Out-patients.

WEDNESDAY.—12.15 P.M., Dr. Burnford: Medical Pathology. 2 P.M., Mr. Tyrrell Gray: Operations. 2 P.M., Dr. Owen: Medical Out-patients.

THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Department. 2 P.M., Mr. Bishop Harman: Eye Department. 3 P.M., Sir Henry Simson: Gynæcological Wards.

FRIDAY.—10.30 A.M., Dr. Dowling: Skin Dept. 11 A.M., Dr. Pritchard: Modern Methods in Medicine. 2 P.M., Mr. Vlasto: Throat, Nose and Ear Dept.

SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy. 10 A.M., Mr. Banks-Davis: Operations on Throat, Nose, and Ear.

Daily, 10 A.M. to 5 P.M., Operations, Medical, Surgical, and Special Out-patient Departments, Saturdays, 10 A.M. to 1 P.M.

POST-GRADUATE HOSTEL, Imperial Hotel, Russell-square, W.C.

TUESDAY, Dec. 7th.—9 P.M., Mr. A. C. Morson: Peccant Prostate.

THURSDAY.—9 P.M., Sir Charters Symonds: Carcinoma Œsophagus.

FRIDAY.—9 P.M., Mr. T. H. A. Chaplin: Medical Service at Sea in the Mercantile Marine.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street.

THURSDAY, Dec. 9th.—4 P.M., Mr. O. L. Addison: Cleft Palate.

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL, Gray's Inn-road, W.C.

FRIDAY, Dec. 10th.—4 P.M. Mr. Nicol Rankin: Earache.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY, Dec. 7th.—5 P.M., Dr. W. Griffith: Eczema (1).

THURSDAY.—5 P.M., Dr. W. Griffith: Eczema (2).

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.

TUESDAY, Dec. 7th.—4.15 P.M., Dr. J. Shaw Dunn: Some Points Respecting Mineral Metabolism.

FRIDAY.—4.15 P.M., Dr. F. E. Tylecote: Syphilis of the Lungs.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.

FRIDAY, Dec. 10th.—3.30 P.M., at the Royal Infirmary: Dr. Barnes: Medical Clinical Cases.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C.

WEDNESDAY, Dec. 8th.—4 P.M., Lieut.-Colonel F. E. Fremantle: The Rôle of Parliament in Regard to Health Legislation.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.

TUESDAY, Dec. 7th.—4 P.M., Prof. G. Lovell Gulland: High Blood Pressure, Albuminuria and Glycosuria in their Relation to Life Insurance. Discussion to be opened by Dr MacTier.

Appointments.

DUNCOMBE, C., M.B., B.Ch. Camb., D.P.H. Oxf., has been appointed Assistant Medical Officer of Health for Doncaster and Schools Medical Officer.

FAIRER, J. A., M.B., Ch.B. Manch., D.P.H., Medical Officer of Health for Leicestershire.

TAYLOR, J. S., M.B., Ch.B. Aberd., Assistant Medical Officer of Health for Manchester.

Certifying Surgeon under the Factory and Workshop Acts: WHITBY, R. B., M.B., Ch.B. Brist. (Mere District of Wiltshire); WATT, J. C. (Tunbridge Wells); MCENTEE, E. F., M.B., Ch.B. Belf. (Castleton District of the County of Derby).

Vacancies.

For further information refer to the advertisement columns.

Acton Hospital, Gunnersbury-lane, Acton, W.—Res. M.O. £150.

All Saints' Hospital for Genito-Urinary Diseases, Vauxhall Bridge-road, S.W.—Res. Sen. H.S. Also Hon. Res. Jun. H.S. At rate of £200 and £100 respectively.

Ashton-under-Lyne District Infirmary.—H.S. At rate of £150.

Birkenhead Borough Hospital.—Cas. H.S. £100.

Birmingham and Midland Eye Hospital.—Two H.S.'s. £120 and £110 respectively.

Blackpool, Victoria Hospital.—Asst. H.S. £120.

Bridgwater General Hospital.—H.S. £130.

Brighton, Borough Infectious Disease Hospital and Sanatorium. Res. M.O. £350.

Brighton, Royal Alexandra Hospital for Sick Children.—H.S. At rate of £100.

Brighton, Sussex, Maternity and Women's Hospital.—Second Hon. Obstet. Phys.

Cairo University.—Prof. of Pathology, £E.2000. Also Prof. of Bacteriology £E.1500.

Cancer Hospital, Fulham-road, S.W.—Pathologist. £1000.

Canterbury City and Borough, &c.—M.O.H. and School M.O. £800.

Cardiff City, Mental Hospital, Whitchurch.—Res. Clin. Asst. 50 guineas for six months.

Chester Royal Infirmary.—Second and Third H.S.'s. Each £150.

City of London Hospital for Diseases of Heart and Lungs, Victoria Park, E.—Res. M.O. £250. H.P. At rate of £100. M.O. to Out-patient Dept. At rate of £150.

Dreadnought Hospital, Greenwich.—H.P. and H.S. Each at rate of £110.

East African Medical Service.—Two Asst. Bacteriologists. £600.

East London Hospital for Children and Dispensary for Women, Shadwell, E.—H.S. At rate of £125. Also Part-time Pathologist. £400.

Hampshire County Council.—Dental S. £500.

Hospital for Sick Children, Great Ormond-street, W.C.—Surg., Phys. to Out-patients. Anæsthetist. £15 15*s.*

Liverpool, St. Paul's Eye Hospital, Oldhall-street.—H.S. At rate of £60.

London Hospital, E.—First Asst. and Reg. to one of the five Surgical Firms. £300.

London Lock Hospital, 91, Dean-street, W.—Clin. Assts. to Out-patients.

Macclesfield, Cheshire County Mental Hospital, Parkside.—Asst. M.O. £350.

Maidstone, Kent County Ophthalmic Hospital.—Hon. Ophth. S.

Manchester, Ancoats Hospital.—H.S. At rate of £100.

Manchester Royal Infirmary.—Asst. Reg. Surg. O. At rate of £150.

Manchester, St. Mary's Hospital.—Hon. Asst. S.

Middlesex Hospital and Medical School.—Surg. Registrar and Med. Registrar. Each £300.

Miller General Hospital for South-East London, Greenwich-road, S.E.—Res. Cas. O. £150. Also H.S. £125.

Norwich, Norfolk and Norwich Hospital.—H.P. and H.S. Each £120.

Nottingham City Laboratory.—Pathologist. £750.

Nottinghamshire County Council, &c.—Asst. Sch. M.O. and Dist. M.O.H. £700.

Plymouth, South Devon and East Cornwall Hospital.—Jun. H.S.

Queen Charlotte's Maternity Hospital, Marylebone-road, N.W.—Asst. Res. M.O. At rate of £80.

Royal Army Medical Corps.—Commissions.

Royal Free Hospital, Gray's Inn-road, W.C.—Orthopædic Surg.

Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—H.P. At rate of £100.

Ruthin Castle, North Wales.—Jun. P. At rate of £200.

Ryde, Royal Isle of Wight County Hospital.—Vacancy on Hon. Med. Staff.

Salford Royal Hospital.—Res. Surg. O. £200. Two H.S.'s, H.P., and Cas. H.S. Each at rate of £125.

Swansea General and Eye Hospital, Beck Laboratory.—Asst. Pathologist. £500.

Wallasey, Victoria Central Hospital.—Jun. H.S. £100.

West Bromwich County Borough.—M.O.H. £1000.

West London Hospital, Hammersmith, W.—Phys. Also H.S., H.P., Res. Asst. Cas. O., and Aural and Ophth. H.S. Each at rate of £100.

Winchester, Royal Hampshire County Hospital.—H.P. At rate of £150.

Wolverhampton and Staffordshire Hospital.—Res. M. O. At rate of £150.

Wrexham and East Denbighshire War Memorial Hospital.—Two Res. H.S.'s. Each at rate of £100.

The Chief Inspector of Factories announces a vacant appointment for a Certifying Factory Surgeon at Crediton (Devon).

Births, Marriages, and Deaths.

BIRTHS.

BURRELL.—On Nov. 21st, at "Dunley," Knutsford, the wife of Dr. E. M. Burrell, of a daughter.

BUXTON.—On Nov. 24th, at Queen Anne-street, W., the wife of St. J. D. Buxton, F.R.C.S., of a daughter.

MARRIAGES.

FREW—MORTON.—On Nov. 25th, at the Presbyterian Church, Putney, John Frew, M.B., D.P.H., to Katharine Matheson, eldest daughter of Dr. and Mrs. John Morton, Gwendolen-avenue, Putney.

DEATHS.

BUTCHER.—On Nov. 25th, suddenly, at "Grangefield," Park-road South, Birkenhead, Arthur Herbert Butcher, M.R.C.S., L.R.C.P.

PENNY.—On Nov. 27th, at Querns Cottage, Swanage, Edward Penny, M.D., late of Marlborough.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

LONDON POST-GRADUATE HOSTEL:
CLINICAL REMINISCENCES.

ON Nov. 1st Sir JAMES DUNDAS-GRANT gave, at the Post-Graduate Hostel, Imperial Hotel, Russell-square, an address entitled Clinical Reminiscences.

Like a certain set of comedies, he said, clinical reminiscences might be classified as pleasant and unpleasant, whilst a further group might be added under the heading of "peculiar." Among pleasant reminiscences he could recall many cases of vertigo of the Ménière type relieved by ossiculectomy or by small doses of quinine. In some of them the patients had had fulminating epileptiform attacks and cholesteatomatous changes in the middle ear, particularly in the attic where the desquamative products were shut in by the ossicles. In these cases removal of the ossicles had permitted free escape of the accumulations and complete relief from the attacks. It was sometimes asked whether hearing was destroyed by the removal of the ossicles. Sir James Dundas-Grant answered this question by showing a case in which the ossicles had been removed because of persistent attic suppuration. Before operation the deafness was very considerable but now the patient could hear a soft whisper at the distance of 18 feet.

The value of small doses of quinine, continued Sir James Dundas-Grant, had been shown in many cases referred to the ear department of the West End Hospital for Nervous Diseases. In a large proportion relief had followed the administration of doses as small as one-half or even a quarter of a grain thrice daily, the vertigo returning when the quinine was omitted and disappearing again on its resumption. By Bárány's caloric test it had been found that the quinine acted as a sedative to the labyrinth of the healthy side.

The lecturer then demonstrated the method of testing the activity of the labyrinth by means of cold air. He regarded it as very effective and devoid of the discomfort and danger attending the use of cold water for the purpose. Nystagmus to the opposite side, with vertigo, postural deviation, and past-pointing to the same side was induced in normal persons in 29 or 30 seconds; but in a patient with nerve-deafness, who was shown, no reaction could be produced in over a minute and a half. To test the state of the nerve trunk galvanism was useful; one electrode was placed on the ear to be tested, the other on an indifferent part of the body, such as the back of the neck. If the cathode was applied and the current increased to 10–14 milliampères a definite nystagmus usually developed to the same side ("comes to the cathode"). The process, however, was very unpleasant and with a few milliampères a swaying of the body to the opposite side could be induced, showing the functional activity of the nerve.

Among less pleasant reminiscences, continued Sir James Dundas-Grant, were those of obstinate tinnitus aurium in which no gross aural cause could be detected. In some of these the application of the anodal galvanic pole—about 5 milliampères for five or ten minutes—afforded relief. The cathode could be placed on the hand and a binaural rheophore might be used for conveying the anodal current to both ears simultaneously. Care had to be taken to avoid an anodal opening shock. A special type of complaint was pulsating tinnitus synchronous with the pulse. When this tinnitus could be checked or diminished by pressure on the vertebral arteries in the suboccipital triangles it was often due to vasomotor disturbance and responded to bromides. He demonstrated the method of exercising compression on the arteries with the thumb and middle finger of one hand, whilst making counter pressure on the forehead with the other hand.

He had pleasant reminiscences, he said, of cases of obstinate deafness due to extreme catarrhal narrowing of the Eustachian tubes, in which unexpected improvement had followed the use of Weber-Liel's fine intratympanic tube passed through the Eustachian catheter when simple catheterisation had been quite ineffective in his hands and those of others.

For prophylaxis against tonsillitis Sir James Dundas-Grant advocated the use of thymol water as a gargle, and in reply to a suggestion that fluids used as gargles did not reach the tonsils, he demonstrated von Troeltsch's method of gargling, in which, with the head thrown back and the mouth kept open, the fluid was submitted to the movement of swallowing without, if possible, any being allowed to go down the throat. He had tested this method by having a culture taken from his own tonsils before and after gargling with thymol water; the colonies were extremely numerous before and almost absent afterwards.

Among peculiar reminiscences, he recalled a case of cough attributed to tuberculosis of the larynx, in which no laryngeal disease had been found but only symptoms of abscess of the liver, and a case in which suffocative attacks in a male infant were not due to presumed laryngeal obstruction but to spasm of the glottis associated with priapic manifestations afterwards cured by circumcision.

PASSPORTS FOR THE ITALIAN RIVIERA.

THE recent provision of the Italian Government with reference to passport regulations does not affect intending British visitors to the Italian Riviera. Dr. H. J. Spon writes from Ospedaletti to say that they are now, as always, heartily welcomed throughout Italy.

The Government luxury tax on hotel bills has been abolished, while the Communal Taxe de Séjour remains in force, and, in Ospedaletti, for example, has been fixed at rates varying from 50 centesimi to 2 lire per day per person, according to the class of hotel. This tax must be paid for any period up to 50 days, after which time no further payment is necessary throughout the season. In Ospedaletti pension terms are the rule; in the smaller hotels, 35/40 lire per day per person; in the more pretentious, 50/70 lire, while two single rooms, or a double-bedded room, with bathroom, can be secured on terms ranging from 110/150 lire per day. Arrangements can be made also to include the small additional charge for central heating and the 10 per cent. service tax.

ACCIDENTS WITH ELECTRICITY.

So few accidents are reported from the use of electric light and heat that most people have forgotten that a current of 100–250 volts laid on for domestic purposes may prove as dangerous as the high-tension supply which inspires respect in everyone. Dr. A. Zimmern has contributed to a recent issue of the *Bruxelles Médical* a long article on the way in which domestic accidents may be caused and prevented. Most mishaps, he says, come about through the tendency of all currents to go to earth. If the insulation of a switch or lamp is broken down and the metallic part is in contact with the supply of electricity, anyone touching it may act as a bridge through which a large proportion of the current returns to earth. Linoleum or carpet may block the path of the current, but a person standing on a floor of damp concrete or wet earth will certainly get a severe shock. Hand-lamps with a flexible lead are thus responsible, says Dr. Zimmern, for a good many deaths, and it is especially risky to hold a lamp in one hand and turn on a water-tap with the other. It is even more dangerous for anyone in a bath to handle electric apparatus, whether alight or not, for the bath is a perfect earth and the soaked skin so excellent a conducter that quite an insignificant current is enough to cause death.

It seems that a subject whose attention is concentrated suffers less from a shock than one who is relaxed, but, curiously enough, this rule does not apply to the relaxation of sleep. An anæsthetised rabbit remains unharmed by a current that would kill a conscious rabbit, and men who have been struck, whilst asleep, by fabulously high voltages have awakened slightly stunned, but unhurt. Cardiac debility, says Dr. Zimmern, does not add to the danger of a shock, and it is not clear why some people are not more susceptible than others. According to most authorities the immediate effect of a shock is to inhibit respiration by its action on the medulla, and the first-aid treatment is, therefore, artificial respiration. Jellineck states that hardly anyone is killed outright by electric shock, and that there would be few deaths if prompt and adequate treatment were applied. The asphyxiation, especially in shocks from low voltages, can also be due to tetanisation of the respiratory muscles. Oliver and Bolam, however, found in 1898 that when an animal was subjected to an electric shock the first effect was a stoppage of the heart and a tremor of the fibrils of the ventricle, with secondary asphyxia. This fibrillary tremor is not necessarily fatal to animals; how it concerns man is still a matter of theory.

The first act of the rescuer must be to cut off the supply. Sometimes a man surprised when working on high cables hangs by his hands in a state of spasm, and the circuit should not be broken until his descent has been provided for. It is disastrous to handle a person who is still in contact, as he is for the time being a live wire himself. If the current cannot be cut off, rescue may be tried by means of a piece of wood or a rope, but they must be dry. An electrocuted patient is to be treated as if drowned. Animals have been revived by heart massage and intracardiac injections of camphor, but the result of this treatment in man remains to be reported. The Schäfer method of resuscitation is still the best, and should be started at once. It has the advantage over Sylvester's method that it is less exacting to the operator and does not require extension of the tongue. The Panis artificial respiratory apparatus, which is worked by a lever and can be used for hours on end with little fatigue, is invaluable for these cases. The movements should be continued as long as there is no positive evidence of death. Dr. Zimmern recalls how an electrician once described to

him his anguish when, on the verge of recovering consciousness after a severe shock, he heard, as from afar off, one of his rescuers remark, "Better give up. He'll never come back."

CONTRACEPTION TEACHING AT WELFARE CENTRES.

THE following letter has been addressed to the hon. secretary of the League of National Life :—

Ministry of Health,
Whitehall, S.W. 1.
18th November, 1926.

SIR,—I am directed by the Minister of Health to refer to your letter of the 16th instant in regard to the policy of the Ministry of Health in relation to the giving of information in reference to methods of contraception at maternity and child welfare centres, and to state that the Minister has, in agreement with his predecessors, adopted the policy with regard to this matter which is set out in the following paragraphs :—

(1) That the maternity and child welfare centre should deal only with the expectant and nursing mother (and infant) and not with the married or unmarried woman contemplating the application of contraceptive methods.

(2) That it is not the function of an antenatal centre or a maternity and child welfare centre to give advice in regard to birth control, and that exceptional cases in which the avoidance of pregnancy seems desirable on medical grounds should be referred by the medical officer of the centre for particular advice to a private practitioner or hospital.

I am to explain that this reference of exceptional cases by the medical officer of a centre is a wholly different matter from the giving of contraceptive advice and instruction at the centre itself, and that such reference should be made only on medical grounds by the medical officer of the centre and not by voluntary helpers or nurses on general social grounds.

I am, Sir, your obedient Servant,
(Signed) E. L. PUXLEY.

THE "S.O.S." SUGAR BASIN.

WE have received from Messrs. Joseph Gilbert and Sons, Sun Works, Bissell-street, Birmingham, a sugar-basin which has been designed to keep the contents free from dust and from contamination by flies by providing an ingenious close-fitting lid. Attached to the inside of the lid is the sugar-tongs, constructed on the principle of lazy tongs, while the handle for working this part of the apparatus, placed outside the lid, forms also the handle for lifting the lid from the container. The invention, which is made in silver or other kinds of plate, should find a place among hygienic contrivances in the home and certainly in hotels and restaurants.

INDUSTRIAL ILLUMINATION.

WE have received from the Department of Scientific and Industrial Research three technical papers on Illumination Research. The object of the first, entitled "The Terminology of Illumination and Vision" (H.M. Stationery Office, 1926, pp. 21, 9*d*.), is to acquaint readers of the reports published by the Illumination Research Committee with the exact definition of the technical terms used both by the physicists and the physiologists engaged in the various researches. For the former, Mr. J. W. T. Walsh, of the National Physical Laboratory, has made himself responsible, the physical terms needing definition including such expressions as "luminous flux," "brightness," and "international candle." On the physiological side Dr. W. S. Duke-Elder explains the chief technical terms employed in physiological optics, including such matters as the light, form, and colour senses and retinal adaptation. The other papers deal with the Transmission Factor of Commercial Window Glasses, by A. K. Taylor, A.G.G.I., and C. J. W. Grieveson, M.A., B.Sc., of the National Physical Laboratory (pp. 10, 6*d*.), and Light Distribution from Industrial Reflector Fitting No. 1, by H. Buckley, B.Sc., and C. J. W. Grieveson (pp. 26, 1*s*.).

THE CORKSCREW.[1]

A BETTER knowledge of the history of wine would assist in the public appreciation of the teetotal question, though many economic problems have to be solved before light wines can be drunk in this country in the manner that they were before the corkscrew was invented, and when rich and poor alike could sing metrical toasts while consuming claret out of elegant glasses. The bottlescrew was the original name of the corkscrew, and the significance of its appearance early in the eighteenth century is that previous to that date wine was a draught beverage, and was consumed from the cask. On the introduction of bottling with cork stoppers, the corks were made conical, and more than half of their substance was left above the neck of the bottle, so that the plug could be extracted by the fingers. Bottles could not be laid on their side, nor the process of maturing as we now understand it carried out. When corks were driven home flush with the necks of cylindrical bottles fit for storing in bins, the corkscrew arrived. As a whole-hearted advocate of wine-drinking, Mr. Simon naturally points to the political schemes for crippling the trade of France as the cause for the bestial drunkenness which afflicted society when Hogarth's relentless pencil drew the degradation of our gin-sodden populations. Home-brewed ale and imported clarets were then replaced by ardent spirits, and fortified port became the beverage of the rich. Gin, British brandy, and home-made cordials, Hollands from the Low Countries, and arrack from the colonies, were freely imbibed by all classes, while a highly-organised trade in smuggling procured French brandy duty free. How important a part smuggling played in the history of England during the eighteenth century can be gathered from the portentous figures which Mr. Simon gives in illustration of successful defiance of the law. A curious side-light is thrown on drinking habits among persons in the highest political positions when we learn of a practice, which lasted to the end of the eighteenth century, in spite of the protests of the Board of Customs, under which all duties on wine imported by British diplomats and political men when returning home from an embassy or from a mission abroad were remitted.

This book is full of accurate and curious information on wine-drinking in England during the eighteenth century, and the written story of social life during the period is embellished with some well-chosen and amusing pictures.

[1] Bottlescrew Days: Wine-drinking in England during the Eighteenth Century. By André L. Simon, F.R. Hist.S. London: Duckworth and Co, 1926. Pp. 273. 21*s*.

BATS, BUGS, AND PRUSSIC ACID.

BATS were becoming a nuisance in an unfinished attic of a house in the Edgewood Arsenal, the bats were infested with bed-bugs and lice, and the successful attempt to get rid of them all is narrated in the *Military Surgeon* for October by First-Lieut. H. A. Kuhn, of the Chemical Warfare Service. As bats have a certain economic value, being insectivorous, it was first sought to clear them out by laying chloride of lime about, and when that failed, by tear gas. These measures proving unsuccessful, it was decided to use hydrocyanic acid and cyanogen to kill both the bats and their parasites. As the roof of the attic was unfinished it seemed necessary to use these gases in three times the ordinary strength to ensure killing the bats and their parasites quickly. The attic contained 4000 cubic feet, so six three-gallon crocks were placed round the floor, and in each 1500 c.cm. of commercial hydrochloric acid, diluted with an equal quantity of water. Into each of these, at 1.40 P.M., a man, protected by a suitable gas-mask, dropped two packets, each of 6 oz. sodium cyanide, with 3 oz. sodium chlorate, coarsely ground and done up in cheese cloth, and then left the attic, sealing the door, which was not opened till 18½ hours later,—at 8.10 next morning. Two bats flew out at once, and four others a few minutes later, but these latter dropped, dead, on the ground. Temperature was about 80 deg., and there was a slight drizzle, but no wind. A little lacrymation was noted among people close outside. When the attic was opened there was but a slight odour of gas. No bats survived; 260 dead bats were counted; their parasites were all killed. The possible danger to human life being so great, preventive measures should always be in readiness. In addition to fresh air, intravenous injection of sodium, thiosulphate ("hypo") is recommended as the best antidote, in 25 per cent. solution, to be kept ready in a 5 c.cm. syringe. No one unprotected by a suitable mask should be in the neighbourhood.

LACRYMAL SECRETION AS A BACTERICIDE.

Dr. Michael Grabham, of Madeira, has addressed a brief statement to the Medical Research Council and the British Empire Cancer Campaign detailing the apparently good results which have been obtained by Dr. F. Pitta, of Funchal, in the treatment of 17 cases of malignant disease with trachoma exudate. The lacrymal secretion has been shown by Dr. A. Fleming to possess certain bactericidal powers and Dr. Grabham attributes Dr. Pitta's happy clinical results to the influence, mainly, of the diplococcus ascertained by Dr. Fleming to be present in lacrymal secretion and named by him *Micrococcus lysodeikticus*. Of the 17 cases treated by Dr. Pitta only two are mentioned in Dr. Grabham's communication with any detail, but one of these, a case of inoperable cancer of the cervix uteri, forms a striking story. Dr. Grabham's pamphlet is in substance a plea for further research directed to verify the imputed inhibitory energy of the natural lacrymal outflow.

Dr. Crookshank writes to say that the quotation from the Latin version of Galen (18–2–24) that prefaced his Bradshaw lecture (reported in THE LANCET for Nov. 6th, p. 939) should run as follows: "Verumtamen praesentium rerum cognitionem proprio nomine *diagnosin*, hoc est dignotionem, appellare consuevimus."

Messrs. Watson and Sons (Electro-Medical), Ltd., of London, have reprinted an article from the *Electrical Review* describing the equipment furnished by them to the new radiological department of the Edinburgh Royal Infirmary.

A Lecture
ON
HIGH BLOOD PRESSURE
FROM THE CLINICAL ASPECT.

Given at St. Andrews (James Mackenzie) Institute for Clinical Research on Oct. 19th, 1926,

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HIGH blood pressure is a sign not a disease, and may, of course, appear temporarily as the result of transient mental emotion or toxæmia. But the form of high blood pressure that will be conveniently considered in connexion with the title "High Blood Pressure from the Clinical Aspect" is fairly constant, and corresponds to the condition called hyperpiesia by the late Sir Clifford Allbutt; this is the essential or idiopathic hypertension of American medicine. The word hyperpiesis was confined by Allbutt to the rise of blood pressure.

CLINICAL MANIFESTATIONS ASSOCIATED WITH HIGH BLOOD PRESSURE.

In the first place it will be advisable to consider the clinical manifestations that may be associated with high blood pressure alone, not "the symptoms of high blood pressure" (for, strictly speaking, the phrase clinical manifestations of a symptom is meaningless)—namely, in a person without any cardiorenal complications or arterio-sclerosis. What symptoms can be rightly associated with an abnormally high blood pressure? Are they directly due to it? Or are they concomitant results of the factor responsible for the high blood pressure? Because if the symptoms found in patients with a high blood pressure are due to a uræmic toxæmia or to a resulting or complicating arterio-sclerosis, a lecture on the clinical symptoms solely due to high blood pressure might appear to be like that of the famous chapter in Horrebow's "Natural History of Iceland," "There are no snakes to be met with throughout the whole island."

The physiological high blood pressure accompanying active physical exercise, the frequent freedom from symptoms in persons found to have high blood pressures in routine examinations, as for life assurance, and the malaise that may follow its too energetic reduction, are arguments in favour of the view that high blood pressure is a compensatory mechanism (Osler), for example, to prevent anæmia of the brain and medulla; and that some underlying disorder, metabolic, infective, or even of structural origin, makes it necessary that the individual's blood pressure should be set higher than that of the ordinary healthy person. This attractive explanation is hard to disprove.

The question whether or not the symptoms ascribed to high blood pressure are toxæmic and due to a concomitant or the same factor as the high blood pressure is difficult, but some light may be thrown on it by the following considerations. One conceivable method of arriving at an a priori notion of what symptoms might be anticipated solely from an unduly elevated blood pressure is to take the clinical manifestations associated with unduly low blood pressure (below 100 mm. Hg) in persons without obvious reasons for it, such as Addison's disease, cachexia, and malignant disease, and then to call to mind the exactly opposite manifestations. The symptoms associated with essential hypotension are somewhat vague, but are mainly loss of vigour—mental and bodily—easily produced fatigue, nervous instability, dizziness and giddiness, liability to faintness, insomnia, vasomotor instability, and sensitiveness to cold. In latent high blood pressure—namely, without any subjective discomfort—there is often, if not usually, a sense of well-being and energy. On the other hand, Sir Clifford Allbutt mentioned as symptoms of hyperpiesia, whether renal or non-renal, matutinal depression, languor, apathy even to torpor, fatigue, vertical headache or fullness or weight on the head, insomnia, beating of the heart, especially felt at night on the pillow, and added that in the hyperpietic patient these discomforts may be relieved by a blue pill, but not in the victim of renal disease in whom they are uræmic. Some symptoms, for example, tired feelings, headache, and giddiness, are common to subnormal and supernormal blood pressure, and it would seem reasonable to suggest that in both conditions they are due not so much to the abnormal blood pressure as to their causal toxins, pressor or depressor. This is supported by the late R. W. Michell's observations on the average low blood pressure, often nearly 110 mm. systolic (which some authorities (Fossier) regard as hypotension) of athletic undergraduates at Cambridge, who certainly do not suffer easily from muscular fatigue

As a high blood pressure is often found in the routine examination, as for life assurance, of persons who feel perfectly well, this might be held to justify the generalisation that a high blood pressure without any other factor, whether chemical, such as toxæmia, or structural, such as arterio sclerosis, does not cause symptoms. Before arriving at such a final conclusion it is worth consideration how far the varying sensitiveness of individuals may determine whether or not they react to stimuli or remain unconscious of them. About the existence of such variation in the response to stimuli there, of course, cannot be any doubt. Libman has described a simple physical test by which individuals can be divided into the hyposensitive, the normally sensitive, and the hypersensitive, according to their sensations when pressure is exerted by the thumb on the styloid process of the temporal bone (and the great auricular nerve). Some persons do not experience any pain (hyposensitives) and others a great deal (hypersensitives). He explains the syndrome of angina sine dolore by the hyposensitive character of the patient. If by analogy this is applied to high blood pressure it would appear that in the earlier stages of the condition a large number of persons are hyposensitive and that in the later stages they become hypersensitive. Though at first sight this may seem an unwarrantable assumption, it is not inconceivable, that if, as is probable, high blood pressure is often due to toxins derived from protein splitting, their continued action on the nervous system might lead to a condition of hypersensitiveness.

Although persistent high blood pressure may for a long time be unaccompanied by any symptoms, the question arises as to the existence, though it cannot be detected by physical examination, or even by renal efficiency tests, of early structural changes in the kidneys or blood-vessels, especially of the medulla oblongata. F. M. Allen states dogmatically that high blood pressure never exists with normal kidneys, but qualifies this by admitting that even in rather severe and long-standing hypertension the renal lesions may be limited to such slight changes in the small arteries that only close study reveals them. O'Hare and Walker compared 50 cases of arterio-sclerosis in which the renal arteries were affected and there was a raised blood pressure, with 50 cases of general arterio-sclerosis without either disease of the renal arteries or high blood pressure. Other evidence does not tend to support the exclusively renal origin of high blood pressure; in 72 cases Fishberg found the renal arteries affected in 65 per cent., and these were obviously cases in a late stage.

As has been shown by Starling and Anrep, impairment of the blood-supply to the vasomotor centre in the medulla at once calls forth a compensating rise in blood pressure. A definite association of arterio-sclerotic changes in the medulla with high blood pressure appears to be shown by Bordley and Baker's examination of 24 cases of generalised

arterio-sclerosis; 14 of these with high blood pressure during life constantly showed arteriolar sclerosis in the medulla oblongata and in the kidneys; in the remaining 10, with a normal blood pressure in life, the arterioles in the medulla were healthy at the necropsy. As cerebral arterio-sclerosis may exist without peripheral arterio-sclerosis, it is possible that some cases of high blood pressure are due to sclerotic changes limited to the basilar artery and its branches; but it is unlikely that such arteriolar lesions in the medulla would precede and last so long, as they would have to do in many cases, before producing other nervous symptoms. On the other hand, it is conceivable that some poison to which the vessels of the medulla are susceptible, in a way analogous to imperfectly oxygenated blood, may lead to their vaso-constriction, and so induce a general rise of blood pressure.

It may be noted that, although evidence of retinal arterio-sclerosis is a good guide to the presence of the same change in the brain (Foster Moore, 1916), retinal arterio-sclerosis has been described microscopically when not previously detected ophthalmoscopically (Cohen).

CLINICAL PICTURE.

It is not proposed to consider the much-discussed ætiology of high blood pressure, but there is a subject midway between ætiology and the clinical picture—namely, the anthropometric characters of persons affected with this condition. The hereditary tendency to high blood pressure is well established, and, according to Alvarez, it is a bodily peculiarity inherited equally by boys and girls, but with its manifestations in the female sex delayed until the menopause. Structure and function are so closely inter-related that the "constitution" of a hyperpietic may well show physiological variations from the normal in the direction of exaggerated vasomotor response (Dawson) as well as physical characteristics. Although the make-up or constitution of the body only favours the incidence, and does not indicate the existence, of high blood pressure, the presence of these characteristics enters into the clinical picture of the disorder, and enters into the composite picture which is so quickly recognised in the process of making a facial diagnosis. George Draper has applied the most accurate anthropological methods to the problems of disease, and investigated the physical characters of a number of diseases, one of which is the group of nephritic and high blood pressure patients, based on complete examination of 19 males and 20 females, and it is noteworthy that the characters often differ in the sexes. The time is hardly ripe for a final characteristic picture of the subjects of supernormal tension, but a few of Draper's conclusions may be quoted. The males are small and have the shortest heads, whereas the females are very large, have protruding upper teeth, are heavy faced, more masculine, have longer heads as compared with other disease groups, and, showing physical signs on the lines of acromegaly and previous pituitary activity, are more prone under the specific stimulus of pregnancy to develop high blood pressure or nephritis. Both sexes have the short necks popularly associated with apoplexy. The statistics of the Life Extension Institute of New York show that overweight is more often than a normal weight associated with high blood pressure, but that the incidence of arterial sclerosis in the adipose hypertensives is lower than in normal persons. Possibly this rather unexpected result may be due to difficulty in palpating the radial artery in stout people (Dublin, Fisk, and Kopf). In women about the menopause obesity and high blood pressure often go together, and according to Garvin these two conditions are probably associated results of some underlying factor; he found high blood pressure in 33 per cent. of 200 obese persons, two-thirds of them being women, as compared with 12 per cent. among non-obese controls.

Slightly modifying Lewellys Barker's paradigm of high blood pressure in four groups corresponding to four successive periods common to all the cases, the following stages may be suggested:—

1. Early high blood pressure without any cardiac, arterial, or renal changes as far as can be determined.
2. In which hypertrophy of the left ventricle, but no discoverable arterio-sclerosis, has resulted.
3. In which arterio-sclerosis and renal fibrosis have followed continued high blood pressure, and give rise to the complications in
4. The brain, arterio-sclerotic changes, cerebral hæmorrhage; kidney, chronic interstitial nephritis, uræmia; heart, myocardial failure.

Such a division into stages has the advantage of distinguishing between high blood pressure alone on the one hand and its results and complications on the other. In attempting to estimate the symptoms solely due to high blood pressure, those in the last two groups—namely associated with resulting arterio-sclerosis—must, of course, be excluded. Leslie T. Thorne has also classified cases into four groups, according as the high blood pressure is or is not associated with arterial change, and according as the heart is or is not dilated as a result of the unusual strain.

It will be advisable to discuss separately the physical signs and the symptoms that have been ascribed to high blood pressure with the object of determining how far they can be regarded as solely due to it.

Physical Signs.

The diagnosis, of course, depends on one physical sign—the raised blood pressure taken with precautions to avoid the high blood pressure due to excitement. Very considerable variations in blood pressure may occur from time to time, and this instability is a feature of supernormal pressure. Accentuation of the aortic second sound, on which considerable reliance was placed in the days before the vogue of the sphygmomanometer, is not such an absolutely accurate sign of increased blood pressure, as it occurs as the result of atheromatous dilatation of the first part of the aorta.

Hæmorrhages in various positions are occasionally seen in persons with high blood pressure; but that they are due solely to it and independently of gross vascular lesions, such as arterio-sclerosis and of toxæmia, appears improbable from their infrequency in uncomplicated cases. A sign of importance, though often depending on some local conditions, such as ulcer, angiomatous or other change in the vessels, is a sudden hæmorrhage from a mucous surface (epistaxis is the commonest), and may come as a very unpleasant and ominous surprise to a man who believed himself to be in perfect health. Epistaxis may, it is said, occur in high blood pressure without any evidence of a local cause, such as n ulcer. Profuse gastro-intestinal hæmorrhage is much rarer, and naturally suggests a peptic or other ulcer, but this does not appear to explain all the cases. Rudolf records the case of a man without evidence of renal disease or arterio-sclerosis who with a blood pressure of 180/110 had severe hæmatemesis on three occasions; after the first his abdomen was opened, but no cause was found; after the other attacks he felt better and his pressure was 150/100. Non-tuberculous hæmoptysis has been described in supernormal blood pressure (Allbutt; F. de H. Hall; Rossi); it is analogous to epistaxis, and recalls Andrew Clark's "non-tuberculous and non-cardiac hæmoptysis of elderly persons." It would be natural to ascribe these to some structural change, such as emphysema or arterio-sclerosis, especially in elderly persons, but Allbutt considered that they might occur independently of any local vascular disease.

Retinal hæmorrhages are common in persons with high blood pressure and arterio-sclerosis, but the question arises whether or not they ever occur in high blood pressure without any vascular change. As the condition of the arteries of the retina have been more carefully and frequently examined than those of the nasal and gastro-intestinal mucous membranes, a decision on the question whether or not local vascular

disease is responsible for hæmorrhages in high blood pressure can, perhaps, be obtained with the assistance of ophthalmologists. It appears probable that high blood pressure alone is not sufficient to cause hæmorrhages from healthy vessels, but that given vascular disease, whether arterio-sclerotic or acutely toxic, hæmorrhages are more likely to occur with a high blood pressure.

Mr. Foster Moore argues that they are due to disease of the vessel wall and not to high blood pressure alone; his reasons for this are that they are very common in arteriosclerosis and after retinal thrombosis, which is usually the result of local vascular disease (1924), and in leukæmia, pernicious anæmia, and rapidly produced secondary anæmia in which there is not any rise of blood pressure; that they may rapidly increase towards the end of life without any corresponding rise of blood pressure (1917); and that in arterio-sclerosis the blood pressure is not raised in the retinal arteries (1916). He also finds that the women among his cases were more tolerant of high blood pressure, as judged by survival, than men. Dr. Anthony Feiling has reported 100 cases of hyperpiesia, arterio-sclerosis, and chronic renal disease with retinal changes or vitreous hæmorrhages, in which the visual defect was the chief and generally the only symptom; he has kindly informed me that, while it is very difficult to exclude vascular change, high blood pressure, though an important auxiliary factor, is not likely to be the sole cause of retinal changes; but he considers that retinal hæmorrhages are very uncommon, even in well-marked general arterio-sclerosis, in the absence of high blood pressure. Dr. Maitland Ramsay writes that with healthy retinal vessels there is not much risk of intraocular hæmorrhage.

This question of hæmorrhage in high blood pressure is obviously important in connexion with cerebral hæmorrhage; the conclusion that hæmorrhage does not occur except when the vessels are damaged appears to hold good also with regard to intracranial hæmorrhage.

The Rumpel-Leede phenomenon—namely, the appearance of minute petechial hæmorrhages in the skin distal to the area of pressure after the estimation of blood pressure—is rare in my experience; as it is said to occur also in menstruating women, scarlet fever, and chronic infective endocarditis (Weissmann) it cannot be regarded as pathognomonic of high blood pressure, and is very probably due to endothelial degeneration.

Blood.

It is not uncommon, in spite of the frequency of pallor in persons with supernormal blood pressure, to find some degree of polycythæmia; Lenaz found that the red count varies with the systolic pressure in a constant manner, there being a quotient of 25 between the systolic pressure expressed in millimetres of mercury and the number of millions of the red cells; thus blood pressures of 125, 150, and 170 are associated with red counts of 5, 6, and 6·8 millions. But this hardly holds good. In the cases described as polycythæmia hypertonica (Geisböck), of which Parkes Weber has collected eight with blood counts and blood pressures, there is certainly a general but not absolute agreement with this rule, but by definition there must be both polycythæmia and high blood pressure. It appears that these cases are usually complicated by chronic interstitial nephritis. Differences in the association of high blood pressure and increase in the number of red cells may be explained on the grounds (1) that increased viscosity of the blood in erythræmia may raise the blood pressure, and (2) that increased arterial blood pressure does not alone raise the red count, but only when associated with a rise in the capillary pressure which then leads to concentration of the blood and a fall in its water content (Lomaz). In pure hyperpiesia (without any renal disease) Boas and Frant state that the capillary pressure was not raised; Kylin found the capillary pressure high in glomerular nephritis but not raised in granular kidney. From these observations it might appear that the red count depends on a factor additional to high arterial blood pressure—namely, one, such as glomerular nephritis, which raises the capillary pressure.

Increased excretion of urine and nocturnal micturition are direct and physiological results of raised blood pressure, but the specific gravity of the urine is not necessarily lowered.

The metabolic rate in high blood pressure would, from the observations of Aub and Dubois and of Shapiro, appear not to be raised unless dyspnœa is present.

The Relation between High Blood Pressure and Hyperglycæmia.—In 1910 Neubauer found hyperglycæmia in a large proportion of the cases of very high blood pressure, and ascribed this to excessive adrenal activity. Von Noorden accepted this, but subsequent observers rejected it, finding that very high pressure may exist without hyperglycæmia. But hyperglycæmia without hypertension is infrequent. G. C. Linder, A. Hiller, and D. D. van Slyke conclude that there is not any constant relation between high blood pressure and hyperglycæmia, and Herrick isolates a group of cases with high blood pressure, hyperglycæmia, obesity, and arterio-sclerosis, thus suggesting rather widespread metabolic disorder; Westphal found the cholesterol-content of the blood raised in 71 per cent. of persons with a high blood pressure, and believed that the cholesterol excess caused the raised blood pressure, but it might be regarded as the result of accompanying arterio-sclerosis.

A Beating Leg.—According to Molle, oscillation of the leg when crossed over the other knee, as in testing the knee-jerks, shows that the blood pressure is over 160 mm. Hg. But this phenomenon, so familiar in aortic incompetence, would appear to depend on a large pulse pressure. The late Sir Clifford Allbutt told me that he had had it all his (noticing) life, and that he had a slow pulse (48-52) and a large pulse pressure, or, as he preferred to call it, differential pressure.

A new physical sign of high blood pressure has been described by Brown and Rowntree, of the Mayo Clinic; it is said to occur only in women, and not to occur in arterio-sclerosis. It consists in pulsation in the lower part of the neck on the right side, and may imitate aneurysm. It depends on elevation of the aortic arch, which, therefore, lifts up the right subclavian artery and kinks or buckles the right common carotid artery.

Transient arterial spasm, comparable with that in Raynaud's disease and migraine, has been thought to explain, by the resulting anæmia of cortical areas, temporary aphasia, amblyopia, hemiplegia, mental confusion, and loss of memory (Pal; W. Russell; Williamson); nitrite of amyl and vasodilators have therefore, been recommended for these slight strokes, cerebral crises, or cerebral eclipses as they have been graphically called. On the analogy of Raynaud's disease and migraine, which may show visible spasmodic contraction of the arteries of the retina, which is a prolongation of the brain, this comforting explanation of simple spasm seems to be quite reasonable, but it is probable that there is often more behind—namely, arterio-sclerosis of the cerebral vessels. Osler bracketted high blood pressure with arterio-sclerosis as the cause of these transient cerebral seizures in a paper recording their duration for five years in a medical friend with "arteries like whip-cord," and mentioning that he had seen a score or more cases, in three of which there was no palpable arterio-sclerosis. In the intervals between the attacks the general health may be perfectly good, and possibly there are several causes for these seizures—viz., simple migrainoid spasm in some, probably few, cases; in some "uræmic" or toxæmic spasm; more often cerebral arterio-sclerosis, or even minute areas of softening or of hæmorrhage. Some authorities (Peabody) believe that arterio-sclerotic vessels are more prone than healthy ones to undergo spasmodic contraction and that anginoid pain may be due to spasm, set up by tobacco or other stimuli, of the sclerosed coronary arteries, or that colic, or angina abdominis, may be due to a similar process in the mesenteric arteries.

The late Sir Clifford Allbutt discussed these transient strokes on two occasions at some length, and ascribed them to tiny hæmorrhages, giving examples of such lesions found after death, and pointing out that they may be recognisable only on microscopical examination; he was vigorously opposed to the responsibility of arterial spasm and local œdema, and the view that a terio-sclerotic vessels are more prone than healthy ones to spasm. A clinical justification for the view that these slight strokes are due to minute hæmorrhages is the frequency with which these slight strokes are followed by undoubted cerebral hæmorrhages.

Hypertrophy of the left ventricle, which is a compensatory effect of continued high arterial blood pressure, may be followed by cardiac dilatation and insufficiency. Arterio-sclerosis is another effect of high blood pressure; it and cardiac failure produce their own series of symptoms, which, being indirectly derived from high blood pressure, do not come within the scope of the present, perhaps artificially, restricted discussion—namely, the symptoms of raised blood pressure alone.

Shortness of breath on exertion, often stated to be an early symptom of high blood pressure, was very definitely regarded by Sir Clifford Allbutt as evidence that the patient has entered upon the last stage of his malady and of myocardial strain. My own impression is that this dyspnœa is a phenomenon of the stage when well-marked arterio-sclerosis has supervened; but this may not be invariably true. The diaphragm is usually high in fat people, and Leonard Williams explains the dyspnœa of obese hyperpietics as due to interference with the descent of the diaphragm by the omental accumulation of fat, and refers to the "basitis," described by Heckel, or localised œdema at the base of one or other lung caused by abdominal lipomatosis. It is obviously necessary to bear in mind other causes of dyspnœa, such as emphysema.

SYMPTOMS.

Numerous subjective symptoms have been ascribed to high blood pressure, but very often the distinction between pure supernormal pressure and what has been called organic hyperpiesia—namely, complicated by arterio-sclerosis—has not been borne in mind. This applies, perhaps, particularly to some of the nervous symptoms, as has been seen in regard to transient paralyses.

Headache due to high blood pressure is often mentioned, but is there any evidence that it is solely due to this cause and not to the toxæmia connected with the supernormal pressure? In favour of the direct causal relation of high blood pressure is the relief obtained by some patients from amyl nitrite and vasodilators. The late Sir Lauder Brunton, from too frequent opportunities of studying it in his own person, explained the headache of migraine as due to proximal dilatation and peripheral contraction of the temporal artery. The cause of migraine is unsettled, but hypersensitiveness to some poison causing arterial spasm seems a reasonable hypothesis; the toxic nature of migraine, however, has not met with much support. Lumbar puncture relieves the headache of some persons with high blood pressure; if the increased amount of cerebro-spinal fluid was due to some interference with its removal, the resulting rise in the intracranial pressure would cause both the headache and, by rendering anæmic the vasomotor centre in the medulla, the rise of blood pressure. The familiar experience that some high blood pressure headaches are removed by calomel, salts, and the subsequent purgation, is in favour of a toxic origin. It is significant that headache is also found in people with a low blood pressure, thus suggesting that the headache both in the hypertensive and the hypotensive is toxic, and that any variations in the character of the respective headaches are due to the toxins being different—pressor and depressor.

Vertigo.—Spasm of the vestibular branch of the internal auditory artery, producing from anoxæmia hypersensitiveness of the vestibular receptors (Mills), or of other intracranial arteries, causing cortical anæmia, has been suggested as a cause of vertigo; but it is difficult, if not impossible, to exclude arterio-sclerosis of these vessels. Again, the direct action of toxins on the semicircular canals must be taken into consideration. Further, as vertigo is not a constant symptom of high blood pressure, and as it may be caused by toxæmia, it would appear to be more probably thus excited in hyperpiesia.

Sir Kenneth Goadby tells me that in a number of patients he has noticed vertigo to coincide with a difference in the systolic blood pressure in the two arms, the attacks of vertigo corresponding with this difference and disappearing when the blood pressures on the two sides become equal. This observation, the result of a systematic examination of the blood pressure in both arms and both legs, raises the questions of the causation of the difference in the blood pressure on the two sides and the mechanism of the production of vertigo; in Goadby's cases the intermittent character of the difference in the blood pressure on the two sides of the body suggests spasm or vaso-dilatation, and an analogy with migraine and the transient strokes. The significance of considerable variation of the systolic blood pressure on the two sides of the body varies, and when inconstant may perhaps have a bearing on Goadby's observations on vertigo, but in what way is very speculative.

Differences in the blood pressure on the two sides of the body may be due to anatomical abnormalities or arterio-sclerosis, and then is constant; it may also be found in hemiplegia, although usually slight in amount, and Dana associated this with thalamic lesions, there being a fall of blood pressure on the paralysed side due to vaso-dilatation. In pulmonary tuberculosis R. J. Cyriax found the systolic pressure unequal, usually lower on the affected or more diseased side; in unilateral trauma and in bilateral injuries of different degrees the systolic blood pressure varied on the two sides, but was not constantly higher on the same side (E. F. Cyriax).

Neurasthenic symptoms may be prominent with high blood pressure, but their frequent absence in high blood pressure makes it highly probable that they are due to an underlying toxæmia. Tingling in the hands and feet is toxic or uræmic in origin, and intermittent claudication or limp is fundamentally arterio-sclerotic, though no doubt superadded spasm may cause exacerbations of pain.

Cardiac pain of an anginoid character, on exertion, may occur in association with high blood pressure, and has been explained as the result of stretching of the first part of the aorta; but even so, it is difficult to exclude arterial changes in this part of the aorta and in the coronary arteries.

Abdominal Symptoms.—Some, such as flatulence, dyspepsia, "torpid liver," are rather doubtful, as they may be part of over-eating or gastro-intestinal toxæmia responsible for the high pressure and concomitant results. In rare cases periodic attacks of vomiting—migraine without the headache and ocular sensations—occur. Possibly some cases of abdominal pain, "angina abdominis," may be due to spasm of mesenteric arteries. "Angina abdominis," which was described in this country by Sir Lauder Brunton and by Parkes Weber, includes (1) angina pectoris with the pain referred to the abdomen, and (2) the analogue of intermittent claudication—namely, pain associated with arterio-sclerosis of the mesenteric arteries—but the important factor in intermittent claudication is the arterio-sclerosis, not the high blood pressure.

CONCLUSION.

On the whole it seems probable that high blood pressure alone is not a potent cause of symptoms, but that the association of symptoms, which is so widely recognised, is due either to the cause, such as toxæmia, of high blood pressure, to concomitant or resulting arterio-sclerosis, or to cardiac failure. But high blood pressure has important bearings on prognosis, as has been shown by the statistics of life assurance offices, and should always be the signal

for intensive investigation of an underlying cause—dietetic, psychological, environmental, toxi-infective, and renal. That it is a danger signal in puerperal toxæmia is well recognised.

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MANCHESTER LITERARY AND PHILOSOPHICAL SOCIETY.—The Carnegie Trust has made a grant of £500 towards the upkeep of this society, which was one of the oldest scientific institutions, founded in 1781 and is historically associated with the names and work of Dalton and Joule.

THE LATE DR. ALEXANDER LAWRENCE.—The death occurred on Nov. 23rd, at his residence at Hough Green, Chester, of Dr. Alexander Lawrence, at the age of 80. Dr. Lawrence was born at Cullen, Banffshire, educated at the University of Aberdeen, where he graduated M.A. in 1866, and M.D. in 1872. He was for a time house surgeon and superintendent at Chalmers' Hospital, Banff, and later a clinical clerk in the West Riding Asylum, Wakefield. In 1870, at the age of 25, he was appointed second assistant medical officer to the Chester Medical Hospital, where there were then about 500 patients. In 1895 he became superintendent of the hospital in succession to Dr. J. H. Davidson and during his period of service the number of patients increased to 1100. He retired on superannuation in 1910. Dr. Lawrence was a keen golfer and started the Bache Golf Club, of which he became the first president.

POST-SCARLATINAL MENINGITIS.*

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IN view of the acknowledged rarity of meningitis as a complication or sequela of scarlet fever, the following case may be regarded as of sufficient interest to record, and so to rescue from oblivion:—

J. J. M., a girl, aged 6 years, was a patient at the South-Western Hospital from the middle of January, 1925, for close on two months. During this period she passed through an ordinary though sharp attack of scarlet fever, without other complication than adenitis in the third week, and evidence of ear trouble was conspicuously absent. She was discharged to her home on March 11th, and soon after complained of right earache. She remained otherwise apparently well for a period of three weeks, when she began to suffer from severe headache, which persisted, and was referred to the vertex. A week later pain and stiffness in the posterior cervical muscles developed, followed by profuse vomiting, and she became very drowsy.

On April 14th she was admitted to St. James's Hospital, Balham, in a semi-comatose state, with a temperature of 104·8° F. and typical signs of meningitis. She lay curled up in bed; there was marked cervical rigidity, conjugate deviation of the eyes to the right, and twitching of face and limb muscles. No ear discharge was noted. Kernig's sign was well marked, and the patellar reflexes were absent.

Lumbar puncture was performed on the 15th, and yielded a considerable quantity of cloudy fluid under great pressure. Death occurred on the following day, but consent to perform post-mortem examination was, unfortunately, refused.

Examination of the Cerebro-spinal Fluid.—Very turbid, faintly yellow fluid, yielding a fine viscid coagulum, and on centrifugation a heavy cell deposit. Albumin 0·1 per cent., globulin in excess, dextrose very faint trace. Stained film preparations from the clot and cell deposit showed abundant polymorphs, in marked excess of lymphocytes, and a few Gram-positive cocci in pairs and short chains. Cultivation of the fluid on agar yielded a scanty number of colonies of a long-chained streptococcus. Ample growth was, however, obtained in subculture on blood-agar of streptococcal colonies which were definitely hæmolytic. The blood-agar subculture was submitted to Dr. F. Griffith, bacteriologist to the Ministry of Health, who kindly undertook serological tests. He reported that the streptococcus was serologically identical with one of the strains isolated by Dochez in association with scarlet fever.[1] It was, moreover, the only homologue of the Dochez strain which had so far been found in this country, affording also the only instance apparently recorded in which *Streptococcus scarlatinæ* has been isolated and verified from the cerebro-spinal fluid.

Remarks.

The results of the serological tests would seem to demonstrate a clear link between the original attack of scarlet fever and the ultimate fatal meningitis. It is possible, if not probable, that post-mortem examination would have shown an intermediate focal infection of the middle ear; for, as already stated, there was a history of pain in the right ear for the first time after return home from the fever hospital, without, however, the further evidence of otorrhœa.

As René Benard [1] and others have emphasised, even though careful examination during life may fail to show any indication of involvement of the middle ear, frontal or sphenoidal sinuses, yet post-mortem examination may not uncommonly show unmistakable evidence of an otitis or sinusitis as a source of secondary meningeal infection in cases which might otherwise be regarded as primary meningitis and septicæmic in origin. Meningitis, when it occurs, is more often a late development, with onset about the period of desquamation, seldom as early as the fourth to eighth day of the fever. It has been described by the various observers as occurring on the fourteenth, twentieth, twenty-fourth, thirtieth and thirty-fifth, and even as late as the forty-fifth and fifty-fifth days.

* Read at a meeting of the Metropolitan Branch of the Society of Medical Officers of Health on Nov. 12th.

† It may be convenient to state that unofficial communications, such as this, from medical officers of the London County Council, must not be taken as expressing the views of the Council but only those of the individual officer.—ED. L.

In the case above recorded it may be noted that the first symptom of meningitis—headache—did not appear until the tenth week after the rash, and death followed 12 days later. The usual clinical course presents the classic picture of meningitis, with a duration described as ranging from one to eight or 16 days. Although Benard quotes a case recorded by Netter, in which recovery took place from streptococcal meningitis supervening on scarlatinal otitis, such an event is extremely rare, and the complication must be regarded as almost invariably fatal, unless prompt and effective operative measures are possible at an early date.

Previous Records of Scarlatinal Meningitis.

The records of meningitis complicating or following scarlet fever, even when secondary to an otitis media or sinusitis, are comparatively few, still more uncommon are the undoubted primary cases with no other focal lesion.

(1) *Observations in this Country.*—Dr. F. F. Caiger,[2] in his analysis of 1008 cases of scarlet fever in 1891, recorded complication by otitis media in 125, or 12·9 per cent., rhinitis in 58, or 6 per cent., but not one case of meningitis. In his later experience of the disease during the past 35 years Dr. Caiger writes that he could recall a few cases of scarlatinal otitis with mastoid suppuration, which terminated in meningitis, but only one in which meningitis was not secondary to middle-ear disease. I am also much indebted to Dr. E. W. Goodall for similar evidence of the rarity of a primary meningitis, supplied by his search into the post-mortem records of fatal scarlet fever for the past 30 years at the North-Western and Eastern Hospitals, which failed to show a single case of meningitis without otitis media as the cause of meningeal infection.

Reference is made by J. D. Rolleston,[3] in his text-book on "Acute Infectious Diseases" (1925), to the nervous phenomena not uncommonly met with in severe attacks of scarlet fever, and manifesting "some degree of meningeal reaction, shown clinically by slight nuchal rigidity, headache, and delirium, and on lumbar puncture by hypertension, with or without lymphocytosis of the cerebro-spinal fluid, which is clear and sterile. Suppurative meningitis is almost always secondary to otitis, rhinitis, or arthritis, but there are about eight cases on record of primary suppurative meningitis."

Also the late Claude B. Ker,[4] in his second edition of "Infectious Diseases" (1920), among the complications of scarlet fever, stated, "it is obvious that meningitis may occur in patients in whom the middle ear is seriously affected, and I have seen one fatal streptococcal case in which the ears were reported to be normal by an otologist."

(2) *Continental Records.*—The most complete account of meningitis complicating or following scarlet fever is to be found in the exhaustive paper by René Benard [1] (1909), who succeeded in collecting from statistics published in this country and on the continent a total of 13,550 cases of scarlet fever, among which only nine were reported as complicated by meningitis—i.e., less than 1 in 1500. He classified the available records of some 40 cases claimed to be scarlatinal meningitis into two groups: (1) Those published previous to 1900, in which meningitis was diagnosed mainly on clinical grounds from the exhibition of nervous phenomena in the course of an attack of scarlet fever. (2) Those reported after 1900, when, as the result of the introduction of lumbar puncture, it was possible to determine the nature of the meningeal reaction, whether constituting a true meningitis or not. Quite a proportion of the 40 collected cases he criticised as based on the insufficient evidence of clinical data only, without details of the cerebro-spinal fluid, or unsupported by post-mortem examination, and therefore open to doubt. Out of 28 authenticated cases of secondary meningitis, however, of which he found records, 14, or 50 per cent., were associated with otitis media, four with purulent rhinitis or coryza, two with suppurative arthritis, and in the remainder there was evidence of other focal infections such as frontal sinusitis, purulent ophthalmia, cellulitis, and pneumonia, occurring in the course of scarlet fever.

The probable paths of infection Benard maintained to be either by direct spread from the middle ear, mastoid or frontal sinus, or by transit through local lymphatics or blood capillaries, without necessarily visible continuity between inflammatory focus and meninges. Whereas a streptococcal invasion of the general circulation without focal infection was responsible for the much rarer condition of primary meningitis, there were also cases of secondary meningitis as the result of blood infection attributable to a distant streptococcal focus—e.g., scarlatinal arthritis. A sharp distinction was, therefore, drawn by Benard between primary and secondary meningitis, and as genuine cases of the former he accepted only those in which careful search during life and at post-mortem examination had failed to show any localised source of infection.

To the primary group undoubtedly belonged the eight cases collected or personally recorded by Teissier and Duvoir [5] in 1908, and more recently by them and Boudon [6] in 1922. As example may be cited one of Teissier's cases, of a youth, aged 20, who had an ordinary attack of scarlet fever, and on the eighteenth day (April 2nd) developed a rise of temperature to 40·4° C. with headache; later, insomnia, diarrhœa, and epileptic convulsions of Jacksonian type. On April 13th lumbar puncture yielded turbid purulent fluid showing many polymorphs and abundant long streptococcal chains. Death occurred on the following day, and post-mortem examination showed fibrinous purulent exudate over both vertex and base of the brain. The bones of the skull, mastoid, internal, and middle ear proved to be healthy.

Degrees of Meningeal Reaction in Scarlet Fever.

The above-mentioned writers also described cases of meningeal infection without cellular reaction, occurring as a transitory condition in the course of severe attacks of scarlet fever, from which recovery was possible; and Dr. Goodall has informed me that he has had very occasional experience of scarlatinal patients developing meningeal symptoms and recovering without other evidence of real meningitis. Although seldom met with, Benard drew attention to the same condition in his paper in 1909, and recognised varying degrees of meningeal reaction in response to the presence of the scarlatinal infective agent, whether a virus, whose nature is unknown, or a streptococcus or some other organism.

The character of the reaction lumbar puncture alone could determine, and thus assist in forming a prognosis. The following types were defined by Benard:—

1. Less severe and transitory states of meningismus associated with delirium, in which quite clear cerebro-spinal fluid was obtained in a state of hypertension to the amount of 35 c.cm. in 15 seconds, yielding no organisms and very few lymphocytes, or streptococci only, without evidence of cell reaction.

2. Those showing a more intense reaction—e.g., by a lymphocytosis of 80 cells per field and the presence of streptococci, as in a case recorded which recovered 35 days later. When such cases proved fatal, post-mortem examination showed no more than meningeal congestion and subpial hæmorrhages without evident meningitis.

3. Intermediate between the congestive meningeal reaction and the purulent form of meningitis was also recognised a sero-fibrinous pachy-meningitis with turbid gelatinous exudate composed chiefly of lymphocytes, distinct from:—

(4) The acute suppurative meningitis yielding turbid fluid with deposit of pus cells and streptococci in films and culture, and showing a more or less thick layer of pus in the meninges of both vertex and base, to which more usual type the case here recorded probably belonged.

My thanks are due to Dr. Caiger and Dr. W. MacCormac for kindly providing the clinical notes of the patient when at the South-Western and St. James's Hospitals, also to Dr. Caiger and Dr. Goodall for the benefit of their unrivalled experience of scarlet fever, and to Dr. F. Griffith for determining the type of streptococcus isolated from the cerebro-spinal fluid.

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4. C. B. Ker: Infectious Diseases, 2nd edition, 1920, p. 127.
5. P. J. Teissier, M. Boudon, and M. Duvoir: Bull. et Mém. Soc. Med. des Hôp. de Paris, xxvi., 1908, p. 868 et seq.
6. P. T. Teissier and M. Duvoir: Nouveau Traité de Med., 1922, ii. (Art. Scarlatine, pp. 60 and 61).
7. F. Griffith: Hæmolytic Streptococci, Journal of Hygiene, November, 1926, vol. xxv., No. 4, p. 389.

THE LATE DR. J. F. GEMMEL.—Dr. James Francis Gemmel, who died on Nov. 22nd at Joppa, near Edinburgh, was the eldest son of the late Dr. James Gemmel, of Dunoon, Argyllshire, and graduated in medicine at the University of Glasgow in 1883. After acting as house physician in the Glasgow Royal Infirmary, he became senior assistant medical officer of the county asylum, Lancaster, and later was appointed medical superintendent of the county asylum, Whittingham. On retiring from this post a few years ago he went to live in Edinburgh.

A CONGENITAL CASE OF KALA-AZAR.

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So far as we are aware no case of congenital kala-azar has ever been described in the literature of this disease. It is possible that such cases have occurred in India, but in an endemic area this is difficult, if not impossible, to prove.

Recently we have had the unique experience of seeing a case of an infant, born in England, of a mother suffering from kala-azar, which disease subsequently developed in the child. Before being able to say definitely that an infection is really congenital—e.g., occurring through the placenta—sources of possible fallacy have to be rigidly excluded. We believe that, in this individual case, all such sources have been eliminated.

History of Mother's Case.

Mrs. A., 33; born Isle of Man, lived in United Kingdom till 1916, when she married and went to India. She remained there—except for leaves home—living at various stations, until *June, 1925*, when she came to England, where she has resided since.

Previous Illnesses.—Measles, bronchitis, influenza, malaria in 1916, dengue September, 1924; no other illnesses.

Present Illness.—After her attack of dengue, which was acquired in Calcutta where she was living at the time, patient went to the hills near Darjeeling for a month. From there she returned to Calcutta to her home in Alipore and resumed her normal life. At Christmas, 1924, she got a cold, did not feel well, and noticed about this time that she was pregnant. Her ill-health continued, but she attributed this to the pregnancy. In March, 1925, she noticed a rise of temperature every evening to 100° or 101° F., and, on consulting a doctor, a heavy growth of *Bacillus coli* with much pus was found in her urine. Vaccine treatment and alkalis were given, the urine cleared, but the temperature remained above normal and her general condition got worse. Blood examinations were negative for malaria, and the serum did not agglutinate any of the typhoid group. A blood count showed her white corpuscles only to be 2000 and her spleen was found to be enlarged, three-quarters of an inch below the costal margin. She then consulted Dr. Napier, who cultivated her blood for leishmania with negative results. No splenic puncture was made. She was then given quinine for seven days to see if this would have any effect upon her temperature, but as this failed entirely to influence the pyrexia, and as her condition was rapidly becoming grave she was given urea stibamine intravenously. In all five injections of this were given (0·4 g. in toto), and then, the temperature having subsided and the symptoms having greatly improved, she was sent home to England, where she arrived on June 10th, 1925. She went into a nursing home in Manchester 14 days after arrival as the symptoms had recurred, and there she was given three further intravenous injections of urea stibamine. Improvement again took place and she left the nursing home. She returned there later for her confinement and her child was born on *Sept. 12th, 1925*. After this she began to fail in health again, fever recurred, and eight weeks after the confinement the condition became alarming. She was then sent to the Hospital for Tropical Diseases where she came under our care on *Nov. 6th, 1925*.

Condition on Admission.—Patient was very ill. There had been considerable loss of weight, a high remitting fever was present, and the abdomen was filled with a large spleen coming down four inches below the left costal margin. A blood count showed red cells 2,600,000, white cells 1800, hæmoglobin 60 per cent. There was considerable poikilocytosis; no nucleated red blood corpuscles were seen, and no malarial parasites. As the heart sounds were very feeble and the pulse weak and irregular, strophanthus was prescribed. As there was no doubt as to the diagnosis, no splenic or liver puncture was made. On Nov. 9th stibosan (von Heyden "471") was commenced in doses of 0·1 g. intravenously, this being increased at the next injection to 0·2 g. and then continued at this dose every third day. Response was good, the temperature being lower at the end of the first week and then gradually settling to practically normal in the third week. The general condition also improved; the spleen went down and she began to put on weight. Four grammes of stibosan, in toto, were administered, and the patient left the hospital to all intents and purposes cured on Feb. 2nd, 1926.

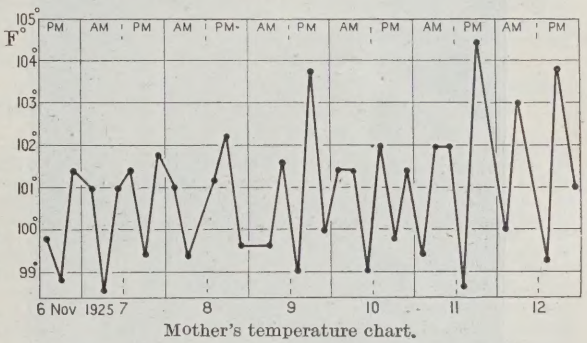
History of Pregnancies.—Children two, the first baby being born in England before she went to India She became pregnant for the second time in India in December, 1925 (last menstrual period Nov. 28th), and went on to full term, the child—the one under discussion—being born in Manchester on Sept. 12th, 1925. Though suffering from kala-azar all the time, the pregnancy went on normally and no untoward symptoms appeared. No history of miscarriages or premature births or anything of gynæcological interest could be elicited in her case.

History of the Child's Case.

F. C. A., male. Weight at birth 7 lb. Confinement normal, no instruments used, slight tear of perineum necessitating two stitches. Never suckled or nursed by mother, but kept in room apart in nursing home, and subsequently taken care of by a nurse of its own for the two months before mother came into hospital, as she was too ill to look after it herself. For the first fortnight after birth did well, and then had a convulsion and was poorly for a week and never picked up properly after that. About seven weeks later started with bad diarrhœa and pain, and was then put into a nursing home in Exeter, where the mother was then staying, under Dr. C. E. Stokes.

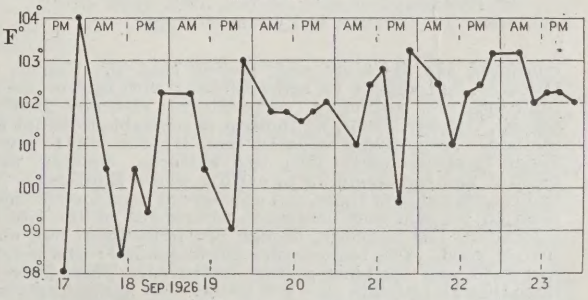
It was at this time that the symptoms of the disease recurred in the mother and she left the baby and came up to the Hospital for Tropical Diseases as described above. On leaving hospital on Feb. 2nd, 1926, the mother asked if there could be any chance of the baby acquiring the disease, and we reassured her that we had never heard of such a case and that there was little cause for worry. However, we suggested that she should bring the infant up for an examination, and this was done in March, 1926. The baby then did not look very strong and had rather a pasty appearance, but as there was no enlargement of the spleen specially noted, we just told the mother to let us know if any further developments took place.

FIG. 1.



Mother's temperature chart.

FIG. 1A.



Baby's temperature chart.

During the summer of 1926 the mother noted that the child was not well, but as some teeth were coming at the time, she thought the clinical symptoms were due to these. Towards the end of August no improvement having taken place and, as the abdomen was now becoming very prominent, the mother became alarmed and finally brought the child up to London to us for another examination on Sept. 17th, 1926.

Examination.—A glance practically showed the diagnosis. There was marked anæmia, emaciation, and a protuberant

abdomen, due to an enormously enlarged spleen well down below the umbilicus. In addition to this there was a high temperature of a remitting nature. The blood count was as follows: R.B.C., 1,600,000; W.B.C., 2600; hæmoglobin, 30 per cent.; poikilocytosis and nucleated red cells.

We got Dr. C. M. Wenyon to see the case, and on Sept. 20th one of us (G. C. L.) put a needle into the spleen and aspirated some of the juice. Smears made from this revealed quite numerous Leishman-Donovan bodies. The diagnosis made clinically was thus confirmed microscopically and it was evident that the child had kala-azar.

Treatment.—The difficulty and risk of giving such a debilitated infant of this immature age intravenous injections of antimony had to be faced. In view of this we consulted the literature and, finding that Dr. Napier, of Calcutta, had written an article dealing with intramuscular injections of antimony preparations (*Indian Medical Gazette*, October, 1925), we thought it advisable to adopt his method. Accordingly stibosan (von Heyden "471") was given intramuscularly into the buttocks, starting with 0·025 g. and increasing up to 0·075 g. every third day. No bad results followed these, and only on one occasion did there seem to be pain and tenderness afterwards at the site of injection. The response, though not immediate, was ultimately good. The temperature fell to normal; the weight increased, and the blood picture improved. There is every hope that an ultimate cure will result. We propose giving, following Dr. Napier again, 1 g. or even up to 1·59 g. in toto.

FIG. 2.

Photograph of baby on Oct. 19th, 1926, after having had 0·7 g. stibosan.

Discussion as to Mode of Infection of Child.

1. In the transmission of kala-azar an infected person appears to be essential. 2. There is strong evidence that the disease cannot be spread without the aid of an intermediate host, which is probably a blood-feeder, most probably of the genus *Phlebotomus*, or the genus *Culicoides*, and recently considerable evidence has been advanced that a sandfly, *Phlebotomus argentipes*, is the transmitter of the causative organism. Other insects such as fleas, lice, bugs, ticks, mites, and mosquitoes have all been suspected without much supporting evidence. 3. The preponderating mass of evidence is incompatible with the suggestion that the disease can be spread directly from man to man, or even indirectly by such media as water and milk, &c., while there is an increasing improbability that infection can follow ingestion of the parsasite.

Bearing these facts in mind many questions that arise in the case under discussion can be answered. The source of the child's infection, occurring as it did in England, was undoubtedly the mother. The question of the intermediate host can also appear to be eliminated. At the confinement, conducted in a nursing home with a doctor and trained nurse present, ordinary precautions would be observed. The subsequent care of the child in a separate room, with a nurse of its own, and only occasionally in the presence of its mother, owing to her weak condition—both in the home at Manchester and for the short period subsequently before the mother came to the Hospital for Tropical Diseases—and living as they were under ordinary English conditions, rules the possibility of an intermediate host out.

Other Means of Infection at the Birth.—Infection by intestinal discharges; Mackie has been unable to demonstrate such a path of infection, and it is not supported in the report of the Kala-azar Commission, India, 1924–25. Besides, with a properly conducted labour, as this one was, this should be entirely obviated. As regards any possibility of infection during the second and third stages of labour, it may be noted that the mother had slight leucorrhœa for the last few weeks of pregnancy. The labour was normal, no instrumental interference being required, but the perineum subsequently had to be stitched. There were no abrasions upon the body of the child and the cord was tied in the usual way between double ligatures. While admitting the outside possibility of infection during this short period from the perineal hæmorrhage—if this actually did occur—or from the leucorrhœa, the ascertained evidence appears all against such a happening. There were no signs macroscopically of disease in the placenta, but unfortunately the organ was not kept. The mother did not suckle the child, so this avenue of infection can be excluded, and though she kissed the baby occasionally there is no evidence that this can transmit the disease; it is most improbable that it should. The probability of infection from association with the mother after her return from the Hospital for Tropical Diseases can be ignored, because the mother left the institution apparently cured and has remained in perfectly good health since, with no signs of any return of the malady.

The period that elapsed from birth before the appearance of symptoms in the infant is not incompatible with a placental infection. It is just possible that the injections of urea stibamine, given to the mother while she was carrying the fœtus, may have been beneficial to the latter. When the symptoms really did appear after the birth is uncertain. The incubation time for kala-azar is not definitely known, but periods of 10 or 12 months before symptoms become marked are not unusual.

Taking all these facts into consideration, it would appear that in this case the disease was congenital—i.e., conveyed through the placenta. This is very interesting as *Leishmania donovani* is chiefly a cellular parasite. It is however found in the blood stream in the leucocytes, and this is how the intermediate host must acquire the infection. As the blood in the placental vessels is only separated from the maternal blood by a thin intervening membrane the infecting parasites must have passed into the fœtal circulation in this way and so infected the infant.

In view of the extreme interest of this case we should like to suggest to practitioners in India that, if they have similar cases of kala-azar mothers being pregnant, the placenta be submitted for careful microscopical observations. It is quite possible that congenital infection of kala-azar is a not uncommon occurrence in the endemic areas of the disease.

Note.—Just as our paper was going to press Mrs. A., the mother, complained of feeling slightly feverish at night, so we re-examined her and, finding that the spleen had increased in size and that the leucocytes had

gone down in numbers, we thought it advisable to do a splenic puncture. This was positive, plenty of Leishman-Donovan bodies being present in the film. The mother has therefore relapsed. This, then, raises again the question of the possibility of direct contact infection of the child from the mother, but as already stated, all the evidence is against the possibility of such a mode of infection.

ULTRA-VIOLET RADIATION.

SOME ILLUSTRATIVE CASES.

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THE therapeutic value of ultra-violet radiation is now so firmly established that a mere record of cases which have benefited by it does not justify publication. A study of the seven cases dealt with in this communication, however, reveals certain special points in the administration of ultra-violet light and constitutes our justification for recording the cases. Cases 1 and 2 would appear to us to offer evidence of the value of local combined with general treatment. How the local application acts it is difficult to understand, but the whole question of the manner in which ultra-violet radiation brings about its beneficial results in suitable cases is at present a matter of conjecture. The penetrative powers of the rays of the Kromayer lamp are very slight, and, although bactericidal to some extent, their action in this respect is so superficial that it can hardly be by such means that they produce their therapeutic effect.

From an experience of a large number of cases, of which Cases 1 and 2 are examples, there appears to us very little doubt that local treatment, when combined with general exposure, plays a very important part in the relief of certain conditions. Case 4 is chiefly of interest in that the symptoms of a condition of a very obscure nature were considerably relieved by ultra-violet radiation. The treatment was entirely empirical, but, where diagnosis is doubtful, treatment must of necessity be empirical.

Clinical Records.

CASE 1.—Male, aged 51, suffering from widespread genital tuberculosis, involving the epididymides, prostate, and vesicles. A prostatic abscess developed, which threatened to burst into the rectum. Mr. J. Alban Andrews evacuated the abscess and removed the remains of the tuberculous prostate by dissection. In July, 1925, a bilateral epididymectomy was performed. A month later the patient was discharged from hospital. His general condition was good, but urine was leaking from a persistent suprapubic fistula, which was to be repaired later.

The patient was readmitted in October, 1925, the fistula was excised, and the abdominal wall repaired. The great amount of perivesical scar tissue rendered mobilisation of the bladder difficult, so that the space immediately behind the symphysis pubis could not be completely obliterated. This was drained. Three days later an abscess developed and discharged through the lower end of the suprapubic wound. Again a suprapubic fistula was established, although there was no urethral obstruction. Urine contained pus in large amounts.

When first seen on Dec. 10th, 1925, both seminal vesicles were hard and clinically tuberculous. There were two suprapubic fistulæ, from which urine leaked. They were surrounded by dense scar tissue, and the lower one was depressed below the surface. Over these the patient was wearing pads of wool, which had frequently to be changed, and there had been no alteration as regards this since the operation.

Treatment by ultra-violet radiation was begun on Dec. 10th, 1925, daily at first, and, later, with a few days interval. General treatment by the mercury-vapour air-cooled lamp was given on the first nine occasions, with exposures varying from 2 to 20 minutes at a distance of 36 inches. Local treatment was given by means of the Kromayer water-cooled lamp, short contact exposures being made with a quartz rod or quartz lens to the fistulæ. In all, 28 treatments were given over a period of 13 weeks, the later general treatments alternating between the air-cooled mercury-vapour lamp and the long flame carbon arc lamp. From time to time local treatment was given to the whole area of scar tissue by the tungsten arc lamp.

The fistulæ have now closed, the patient has put on over a stone in weight, and has returned to his work as a blacksmith. It was found necessary from time to time to give local treatment, as, if this was suspended, there was a tendency for the condition to become stationary. After each local treatment there was a definite diminution in leakage after a temporary increase lasting about 24 hours.

This case seems to demonstrate clearly that the local treatment played a very important part in the cure.

CASE 2.—Male, aged 45. Had a chronic discharging fistula of the thorax for three years, the result of an empyema following pneumonia in 1923. Occasionally the discharge ceased for a day or two, but always returned. Three operations had been performed with the object of closing the sinus, but without success.

When referred to us the patient had a sinus at the level of the eighth rib. From this sinus there was a profuse discharge of foul-smelling pus. The patient's general condition was poor and his appearance "septic."

Examination of chest showed impaired percussion note with diminished voice conduction, and weak breath sounds over the base of left lung.

Treatment began on March 23rd, 1926. Twenty exposures were given to the mercury-vapour air-cooled lamp and the long flame carbon arc lamp. In addition, local treatment with the Kromayer lamp was given to the chest wall in the region of the sinus, the rays being conducted along the sinus by means of a fine quartz rod inserted therein. An intense local reaction was aimed at and produced. The discharge ceased after five treatments and the sinus healed rapidly. There was also definite improvement in the general condition. Treatment continued at intervals until May 25th, 1926. A subsequent X ray examination showed evidence of thickened pleura, but no fluid in chest.

The sinus is now closed and completely healed. There has been no discharge for over six months.

CASE 3.—Male, aged 26. Hodgkin's disease. In January, 1924, patient complained of general weakness and loss of weight, and an enlarged gland was found in the left axilla and old shotty glands on both sides of neck. He went to Leysin under Dr. Rollier for the remainder of that winter. In July, 1924, some tender glands were observed on left side of neck. A white cell count showed a leucocytosis of 18,000 with 3 per cent. of eosinophils. Later, the white count increased to 20,300. No pyrexia. The following winter was again spent at Leysin, and on his return in June, 1925, a gland was removed which microscopically revealed changes typical of Hodgkin's disease. At this date another group of glands had arisen on the right side of neck. These visits to Leysin had benefited him very considerably. In November, 1925, it was decided that instead of going to Leysin, the patient should have a course of ultra-violet radiation.

At this time enlarged glands could be felt on right side of neck, axilla, both groins, and one in the right iliac fossa. Spleen and liver not felt. Mucous membranes pale. Patient complained of feeling "run down." Blood count was as follows: red cells, 4,400,000; white cells, 21,000; hæmoglobin, 81 per cent.; colour-index, 0·9. Differential count (per cent.): polymorphs, 77·66; lymphocytes, 5·66; large mononuclears, 7·0; eosinophils, 9·0; basophils, 0·66; so that the picture was one of a slight degree of secondary anæmia with a considerable leucocytosis and marked eosinophilia. Treatment was begun on Nov. 20th, 1925. In all, 19 treatments were given with either the mercury-vapour air-cooled lamp or the carbon arc lamp, with exposures starting at five minutes and increasing up to 25 minutes at 36 inches distance.

Blood counts were done as follows:

Further blood counts.	28/11/25.	6/12/25.	2/1/26.
Red cells	4,400,000	4,500,000	4,640,000
White cells ..	13,000	14,640	10,430
Hæmoglobin ..	86%	91%	91%
Colour-index ..	0·97	1·0	1·0

Differential count (per cent.) on Jan. 2nd, 1926: polymorphs, 79·5; lymphocytes, 11·0; large mononuclears, 6·0; eosinophils, 2·5; basophils, 1·0.

Even allowing for the well-known fluctuations that occur in this disease, especially as regards the white cells, it would appear that there was an improvement in the blood condition

during treatment. There was a definite rise in the hæmoglobin content, and an even more definite drop in the white cell count and in the percentage of eosinophils, so that the actual number of eosinophils circulating in the blood was very markedly decreased. During the treatment the enlarged glands diminished in size and no fresh enlargement of glands appeared. The temperature taken before and after each exposure showed no pyrexia throughout. The patient himself stated that he felt much benefited, and that the effect on his subjective symptoms was comparable with that experienced on his previous visits to Leysin.

The results in this case would suggest that the artificial, no less than the natural, sunlight has a therapeutic value in alleviating the symptoms and retarding the progress of Hodgkin's disease.

CASE 4.—Male, aged 27. A case of an obscure character which appeared to be an arteritis of some sort. He complained of pain and swelling in the toes and foot on the left side, and inability to place the foot flat on the ground without discomfort, so that he walked on the outer side of the foot. On inspection the toes and foot were observed to be somewhat swollen, cold, and cyanosed. Movements of all joints full and free. Seven years previously a similar condition was present in the other leg, and the right calf now measured half an inch less than the left, owing to subsequent wasting of the muscles on the right side. Wassermann reaction was negative.

Treatment by ultra-violet radiation was begun on Jan. 25th, 1926, and consisted in general baths with the mercury-vapour air-cooled lamp and carbon arc lamp, with local treatment to the foot with the former. Fourteen general and six local treatments were given over a period of four weeks, at the end of which time the coldness, swelling, and cyanosis of the foot had disappeared. The patient was able to put the foot flat on the ground without discomfort, and the pain which prior to treatment had been severe, especially first thing in the morning, was no longer present.

CASE 5.—Male, aged 36. Severe acne of chest, abdomen, and back of 20 years' standing. General baths with the mercury-vapour air-cooled lamp and carbon arc lamp were given, and after ten exposures the condition had almost completely cleared up with the exception of a few larger pustules, to which it was necessary to apply the Kromayer lamp with a quartz rod on two subsequent occasions.

CASE 6.—Severe acne of the face in a girl aged 16. General exposures were given as in the previous case, and local treatment was also given to the face with the tungsten arc lamp and the Kromayer lamp to individual pustules. For the first 10 or 15 treatments very little improvement was observed, but later this became definite, though slow. In all, 35 treatments were given, and at the end of this time the skin was clear and the scars of previous pustules scarcely noticeable.

Cases 5 and 6 were examples of severe degrees of acne. In our experience, ultra-violet radiation is of the greatest value in the treatment of this condition. There is considerable variation, however, in the readiness with which such cases respond to it. The first case was an example of a large group in which the response is almost immediate and in which the condition clears up very rapidly; the latter was an example of a smaller group in which the condition is refractory and requires prolonged treatment, but the results are ultimately good.

CASE 7.—Female, single, aged 32. Debilitated, pale, and listless. Bouts of indigestion of colonic type. Anorexia nervosa. Catamenia absent for ten months.

Treatment began March 26th, 1926, with general exposures, and was continued until 17 had been given up to May 3rd. On March 29th a scanty flow started, rusty in appearance, lasting four days. On April 5th a flow began lasting five days, and of a more normal appearance and quantity. On April 27th a six days' flow, practically normal. Treatment was suspended from May 3rd to May 17th, when three more exposures were given before the period was due. The period began on May 28th, lasted seven days, and was quite normal There is no indigestion, appetite is normal, and all subjective symptoms have disappeared.

This re-establishment of menstrual function, erratic at first but becoming normal in eight weeks after a complete cessation for ten months, seems to justify the treatment of functional abnormalities of ovarian or uterine activity by ultra-violet radiation.

We wish to record our indebtedness to Sir Thomas Horder and Mr. J. Alban Andrews for permission to publish accounts of those of the above cases which they sent to us for inclusion in this paper.

VENTRICULAR PUNCTURE IN APOPLEXY,

WITH REMARKS ON THE TECHNIQUE AND USES OF THE OPERATION.

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As a cerebral hæmorrhage of any but the smallest magnitude is a fatal condition, any method of attack which offers a prospect of relief is worth trial. The following brief preliminary note is of a procedure in apoplexy which I have not seen described.

A Case Related.

A man, aged 50, suffered from headache for a few hours. At 2 P.M. on Jan. 8th, 1926, he was taken ill suddenly at his work and was admitted forthwith to Westminster Hospital. He remained conscious until 4 P.M., vomiting several times. When I saw him at 5 P.M. he was unconscious, and showed a complete left-sided flaccid hemiplegia. The right upper limb was in active movement, the man pressing his hand against the right side of his head. The eyes squinted divergently. The pupils were small and inactive to light. The tendon jerks were exaggerated bilaterally, and there was clonus at both ankles. The left plantar response was extensor in type, the right flexor. The clinical diagnosis of apoplexy was confirmed by immediate lumbar puncture, which showed the cerebro-spinal fluid intimately mixed with blood, but not under an excessive pressure. The pulse-rate was 80 per minute. We considered that the hæmorrhage had already passed across from the right to the left side of the brain.

At 6 P.M., with the assistance of my house physician, Dr. H. A. Dunlop, I punctured the right lateral cerebral ventricle by means of a drill and needle. Hæmorrhagic cerebro-spinal fluid at once escaped, but the flow was slow. When the patient's head was allowed to fall downwards and backwards over the end of the bed, the flow—by gravity—was at once somewhat increased, and a still better flow was obtained by digital compression of the jugular veins. The patient vomited frequently, and there was copious double incontinence. A small syringe, used gently, was filled several times by suction of the ventricular contents. About 10 c.cm. were withdrawn. At 7 P.M. the pulse-rate was 60. The condition of the pupils and reflexes was unchanged, and although there was now more profound unconsciousness, the man's right hand was as before passed frequently to the right side of his head. The operation was successfully performed, but the result was negligible. Death occurred at 1 A.M. At the autopsy Dr. Braxton Hicks was unable to assign any special cause for the hæmorrhage. The heart, kidneys and arteries, general and cerebral, were healthy for the age of the patient. The right ventricle was occupied by an extensive clotted hæmorrhage which had destroyed the brain and which had passed in part into the left ventricle and, as has already been indicated, into the smaller ventricles and spinal subarachnoid space. The spot where the needle had pierced the brain en route to the ventricle was adjacent to a large cortical blood-vessel.

Technique of Puncture.

My knowledge of the operation of ventricular puncture in adults has been obtained chiefly from my colleague, Sir James Purves-Stewart (see his paper in THE LANCET, Dec. 5th, 1925). I have performed it a dozen times. I have found, however, that for a right-handed operator an ordinary right-handed multiplying action drill, with a handle on the left side and with a corkscrew groove in the drill, is quite satisfactory. If a very small puncture wound is desired, as usually is the case, the drill should be the smallest which is larger than the fine lumbar puncture needle to be used. The only difficulty with the drill I describe is that of finding the bony tunnel with the needle after the drill has been withdrawn, but, if a skilled assistant keeps the scalp firmly fixed to the skull, this is inconsiderable. When an area of the scalp had been properly shaved and carefully washed, the site of the proposed puncture, in the case of a conscious patient, is sprayed with ethyl chloride. The operative risk of septic meningitis is a definite one. When the operation is completed, a wooden match, whittled down and carrying pure carbolic acid, is inserted into the wound for a moment. I have the match ready at the outset for possible use as a plug

in case of bleeding from the bone, but I have not had occasion to make use of it. It does not appear to matter if by mischance the drill point is apparently carried by the weight of the body through the dura mater, but the risk of cortical hæmorrhage must be considerable in such an event. Perhaps the dura mater is pushed in front of the drill point. Whether the meninges are pierced or displaced, the conscious patient feels no pain at this or any time. None of my patients have had either pain or shock, immediate or later on. They may hear the movement of the drill unless their ears have been plugged, but they feel nothing unpleasant. They make neither sound nor movement. In the case of a man suffering from severe acromegaly, notably of the skull, the operation was completed and the cerebro-spinal fluid withdrawn before he appreciated that it had commenced. In addition to the risk of meningitis, a definite danger of ventricle puncture is perforation of a blood-vessel lying on the surface of the brain. I have heard of a case in which extensive subarachnoid cerebral hæmorrhage occurred from this accident, and it appears that neither anatomical knowledge nor operative skill can prevent it in a proportion of cases. Our safeguard is to be certain that the drill point passes no further than through the inner table, and to be certain also that the needle point is guarded accurately by its stilette until it has passed, at any rate, beyond the surface of the brain. But, operating by touch alone, it is not easy to be certain of these things. In some cases, especially when one or both ventricles have been displaced laterally, it may be the contra-lateral ventricle which is penetrated by the needle.

Results of Puncture.

The relief of headache, afforded by ventricular puncture to a patient with internal hydrocephalus, from whatever cause, is dramatic. In cases of apoplexy the pain which often is demonstrably present on the side of the head where the bleeding is taking place, may be due to the result of internal hydrocephalus. To some extent any increase of subarachnoid pressure in apoplexy may be lessened by withdrawing the bloody cerebro-spinal fluid from the cistern or lumbar region. Unconsciousness in apoplexy is caused no doubt in the main by destruction of the brain by the pressure of the collection of blood. Whether unconsciousness can be prevented or relieved by ventricular puncture at a very early stage of the hæmorrhage, remains to be proved. I know that during life blood within the cerebral and spinal subarachnoid spaces may clot, but I do not know whether blood within the ventricles during life clots rapidly or slowly, or if it clots there during life at all. Perhaps aspiration of the fluid contents of the ventricle would encourage the ruptured vessel to bleed more than ever, but the escape of the blood by gravity through the ventricular puncture needle might be beneficial. Perhaps also, in an early stage of bleeding, the affected ventricle might with advantage be gently filled with hæmostatic serum introduced through the ventricular needle, the subarachnoid pressure being controlled, if thought necessary, by simultaneous cistern or lumbar puncture, or both. With a needle of wide bore, venepuncture may be performed at the same time for the purpose of reducing blood pressure. A possible difficulty in introducing serum with the technique I describe, might be that of keeping the needle point stationary in its longitudinal axis within the ventricle during the fixing of syringe or tubing.

The clinical diagnosis of suspected apoplexy may be proved in most cases by the visible examination of cerebro-spinal fluid withdrawn by whatever route. Therapeutics apart, diagnosis depends on this ready proof and demands it. The diagnostic difficulties between supposed cerebral hæmorrhage and coma from—e.g., suspected opium poisoning, of which we hear the accounts, would no longer occur if this method of proof were universally practised. Some years ago, during a ward round, a man whom I had just described as a likely candidate for a cerebral hæmorrhage became suddenly unconscious while I was at another bed-side in his ward. Lumbar puncture within the first two minutes withdrew a colourless cerebro-spinal fluid. Lumbar puncture five minutes later revealed the hæmorrhage and clinched the clinical diagnosis.

The cistern route is now frequently employed for therapeutic and diagnostic injection, and for the relief of headache in cases of cervical subarachnoid block; and in several cases of meningitis I have washed the spinal subarachnoid space from the lumbar sac to the cistern. I have not yet injected antisera, syphilitic or otherwise, by the ventricular route. I have had one case, however, in which we demonstrated the use of ventricular puncture in affording an exit for fluid during lavage of the spinal and cerebral subarachnoid space conducted from the lumbar region. The patient was admitted with suppurative meningitis, which had developed apparently from infected skull sinuses. Lavage with saline was employed as described. The purulent fluid, which escaped slowly from the ventricular needle, became gradually colourless during the operation. The lavage did no harm, from the clinical point of view at any rate, but death occurred in due course from the meningitis. Autopsy showed that the convex surface of the brain on the side subjected to ventricular puncture was free from visible meningitis. The opposite cortex, on the other hand, was covered with purulent exudate.

Clinical and Laboratory Notes.

A CASE ILLUSTRATING THE AFTER-EFFECTS OF POISON GAS.

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THE immediate action on the lungs of poison gases, especially chlorine and phosgene, has been studied close to the field of battle, but the after-effects of this weapon are only vaguely known. Though many ex-soldiers have died, post-mortem examinations have been made relatively seldom. The records of the following case are incomplete, because, through a misunderstanding, the lungs were not kept for microscopic examination; but the macroscopic appearances were so definite as to justify publication. For the previous history of the case I am indebted to the Director-General of Medical Services, Ministry of Pensions, and to the Board of Pension Commissioners of Canada, both of whom have placed all their available information at my disposal.

Clinical History.

The patient, a Canadian, was gassed at St. Julien about April 23rd, 1915, during one of the first gas attacks in the second battle of Ypres, so that his condition was probably due to pure chlorine. He developed a bad cough and frothy sputum, but did not go sick till May 24th, after a second gassing at Festubert. He was rapidly transferred to Le Havre and thence to England. At this time he had a great feeling of distress about the throat and left chest, with dyspnœa, severe cough, and copious sputum. A month later the eyes were still very engorged, the cough had nearly ceased, the area of cardiac dullness was decreased, and there was poor chest expansion and air entry, especially on the left side, with a few rhonchi. The note was made: "Probably some old broncho-pneumonic condition left side," and he was described as looking 30, although 41 years of age.

By Sept. 16th his condition and personal comfort had very much improved, though there were rhonchi and shortness of breath. A medical board, in October, 1915, found: "Small expansion of lungs, breathlessness on exertion with pains over chest; some parts show large dry râles and other parts intensified breath sounds. Has been steadily losing flesh." Otherwise their extensive examinations (of urine, blood, &c.) were negative. The board recommended his discharge as permanently unfit, and on his return to Canada

another board discovered "suspicious signs of softening at right apex," gave him a 50 per cent. disability pension, and sent him for observation. No evidence of tuberculosis was found.

There is no record until 1917, when he had apparently returned to England. He was then described as very short of breath, and the word asthma was used. He was thereafter examined every year in London and noted as having chronic bronchitis and emphysema with steadily increasing shortness of breath. About 1921 he appears to have first mentioned general nervousness, and a neurological board found a mild degree of anxiety neurosis. Apparently he never saw a special *medical* board, but in 1924 he was sent to the tuberculosis officer of a reputable London chest hospital, who found bronchitis with no evidence of tuberculosis. In 1925, at the same hospital, an acting tuberculosis officer found "pulmonary tuberculosis, slowly active," and this put his assessment up to a much higher level—not, I should think, unjustly. Subsequent boards, and another tuberculosis officer, recorded their inability to find tuberculosis, but the diagnosis stuck and did more good than harm.

A board in February, 1926, made a statement to this effect: "Weight 109 lb. (120 lb. on enlistment). A barrel-shaped chest, marked bronchitis all over. Pensioner states œdema at times, none now. Pulse 90, with poor exercise tolerance." They gave him 80 per cent. of disability and could find no sign of tuberculosis.

Recent Condition and Findings at Autopsy.

He was admitted to St. George's Hospital in April, 1926, and was then a cyanosed man, looking several years more than his age, with marked œdema of both legs and the left arm, and slight clubbing of the fingers. The apex of the heart was one inch outside the nipple line and the beat was very irregular with numerous extrasystoles. His blood pressure was 140–190, and his vital capacity 63 per cent. below normal. He had a round emphysematous chest with poor but equal expansion. There was dullness over the lower half of the right lung behind, with rhonchi and sibili all over both lungs—so loud and persistent that it was impossible to describe his breath sounds. Urine was very scanty with a fair amount of protein. The deposit contained red cells, pus, and granular casts. No organism was found in the urine nor any tubercle bacilli in the sputum. The Wassermann reaction was negative.

After a week in hospital the amount of urine had increased to about 40 oz. per day, and it contained nothing abnormal; after a month he was greatly improved in every way, and was getting up and about. His chest was nearly clear of rhonchi, except at the right base where the dullness with loss of vocal resonance persisted. His heart was normal in size, but still showed an occasional extrasystole.

On June 3rd, however, he complained of pain in the left side and his temperature rose to 102° F. The next day the classical signs of broncho-pneumonia were present in the left lower lobe. He became very feeble, blue, and dyspnœic, and on June 8th complained of pain in the right side, though no certain signs beyond numerous moist râles mixed with the rhonchi were discernible. The next day he died rather suddenly in a fit of dyspnœa.

Post-mortem Examination.—All the organs appeared normal except the heart, which was flabby and friable, but without gross organic lesion; the kidneys, which were unusually flabby, but otherwise normal; the liver, which was congested; and the lungs. The left lung showed confluent broncho-pneumonia, mostly in the lower lobe. The whole lung, and especially the lower half, was much more waterlogged than is usual in broncho-pneumonia. The pleura over the right lower lobe was very much thickened, and within the lobe were many small bronchiectatic cavities, the largest of which would have contained a hazel nut. The lung was by no means "honeycomb," and the cavities were separated by rather hard, congested lung tissue, with broncho-pneumonic patches. The whole lobe was waterlogged and there was a confluent broncho-pneumonia in the middle lobe. Both upper lobes were congested, but not grossly diseased. There was no evidence of tuberculosis.

Discussion.

The man had no history of any previous disease. Taken together with the note by one of his early boards that he looked younger than his age, this makes it quite certain that the patchy bronchiectasis of one lobe must be attributed to lesions in the bronchi caused by the direct action of chlorine on them. The conclusion cannot be avoided that the intense inflammation of the whole respiratory tract following gassing, if it does clear up quickly enough to prevent the immediate death of the patient, may leave behind it a partial necrosis of the bronchial walls. These soft and weakened structures gradually dilate in the course of years. They form foci for the general pathogenic organisms of the lungs, and these cause more and more general bronchitis. Thus a vicious circle is formed, as the coughing tends more and more to dilate the bronchi.

The original lesion as noted a few weeks after his gassing pointed to the left side being chiefly affected; it was regarded as "possibly some old broncho-pneumonic condition." The patient's fatal broncho-pneumonia started on this side, and this may or may not have been accidental. The thickened pleura over the cavity area is rather curious, and it is still more curious that the dullness to percussion which it produced was not noted until I saw him, for it had certainly been there a long time. Some thickening of the pleura is not uncommon near such cavities, and many of these were near the surface of the lung. Whatever its cause, it very effectively blanketed any direct stethoscopic evidence of cavitation, even if the cavities were large enough to give any physical signs.

I have given the clinical picture at some length because it shows how difficult it is to make sure of the right diagnosis in these cases of bronchitis due to gassing. There can be no doubt that the cardiac dilatation and albuminuria were entirely secondary to the pulmonary condition. They came on comparatively suddenly, and disappeared so very rapidly under treatment as to leave no gross post-mortem evidence of their existence.

That bronchiectasis does follow gassing has been realised for some years. It is not yet obviously common, though it will become more common every year for the next ten years. Recently I have seen a man with early generalised bronchiectasis who is, and has been, regularly at work ever since demobilisation in 1919. He was gassed and has had increasing cough all the time. He is legally debarred from applying for a pension because it is more than seven years since he left the Army. The seven years' rule of the Royal Warrant will go very hardly with these cases, and this is a point to which a wise and benevolent Minister of Pensions might well direct his personal attention.

NARCOLEPSY AS A SYMPTOM OF ENCEPHALITIS LETHARGICA.

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IN a very interesting paper on narcolepsy, published in a recent number of *Brain*, and discussed in a leading article in THE LANCET, Nov. 13th, p. 1017, Dr. W. J. Adie has recorded a case in which the symptoms of this disorder first appeared after an attack of encephalitis lethargica. As at the time his paper was written he was able to find only one similar instance in the literature, I have thought the following case worth relating.

I was first consulted in the case of Mr. M., aged 20, by his relations, who told me that for some time past he had been subject to attacks in which he suddenly fell to the ground. These were of brief duration and came upon him at any time. There was said to be no loss of consciousness. He was a native of Iceland and living in his own country. He had seen many medical men there and in the Scandinavian capitals, and the diagnoses of epilepsy and hysteria had both been suggested.

I saw him in April, 1925, when there was no doubt whatever about the diagnosis of encephalitis lethargica. He presented the characteristic Parkinsonian facies, and his posture and gait, though less severely affected, were typical of the same condition. With this were associated bilateral ptosis and a blinking tic. There were otherwise no physical signs of disease.

His chief complaint was of insomnia. He said that on getting up at about 9 A.M. he became so sleepy that he had to go to bed again; he was at his best in the evening, seldom getting off to sleep until well on in the early hours of the morning.

The history elicited was that at Christmas, 1918, he had an ordinary mild attack of influenza, from which he com-

pletely recovered. In the summer of 1919 he began to have a tickling feeling in the epigastrium; it began when he laughed and it was "like being tickled." Then he began to complain of excessive sleepiness. Whenever he sat down in a chair he went to sleep. There followed a period, beginning with diplopia, in which he was delirious, had hallucinations of vision, and a "funny noise" in his ears. After this he noticed that *whenever he laughed or was excited he fell down.* Subsequently he found that his face was losing expression and that saliva would dribble from the corners of his mouth; he could not read, could not concentrate, and became shaky and like an old man. In these respects he began to improve about 1922 and he was thought to be still improving, but remained liable to the falling attacks.

While giving me his history he had what I noted at the time as an attack of petit mal. My note reads: "A little twitching of the facial muscles, short interval of silence, then talked vaguely in Icelandic; then said, 'I can't move my arm.'"

Dr. Adie describes narcolepsy as comprising two kinds of attack—

"attacks of irresistible sleep without apparent cause and curious attacks on emotion in which the muscles relax suddenly so that the victim sinks to the ground conscious but unable to move."

In the case which I have recorded, both forms of attack seem to have been present at different times in the course of a prolonged encephalitis lethargica, the attacks on emotion subsequently persisting. The early story of the sensation in the epigastrium as if he were being tickled, which occurred whenever he laughed, must surely be regarded as premonitory of the complete attacks. The attack which I witnessed and which I took to be epileptic may not have been so, but raises again the relationship of narcolepsy to epilepsy in which attacks on emotion may occur. Unfortunately, considerations of time and difficulties of language prevented me from investigating the case more fully.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF SURGERY.

AT a meeting of this Section held on Dec. 1st, under the presidency of Mr. V. WARREN LOW, a discussion on the

TREATMENT OF GANGRENE OF THE EXTREMITIES

was opened by Prof. G. E. GASK. The subject of gangrene, he said, was so vast that he would limit his remarks to a consideration of the right treatment of an elderly patient with stiff arteries and threatening gangrene of the extremities. Conservative measures and amputation were admittedly unsatisfactory. He would try to assess the value of periarterial sympathectomy. Blood-vessels owed their tone to the property of unstriped muscle-fibre to be in a state of tonus and to the continuous vaso-constrictor impulses received; additional factors were the response to epinephrin and to the stretching force exerted by the contained blood. By modifying the vaso-constrictor impulses it was hoped to change the calibre of the vessels supplying the gangrenous part. Vasomotor nerve-fibrils, afferent and efferent, were present in the adventitia, and the aim in periarterial sympathectomy was to divide the efferent sympathetic fibres and so abolish control over the distal part of the vessel.

Periarterial sympathectomy in animals was followed by increased temperature or increased flow of blood to the distal portion of the limb. What happened when it was carried out on the human subject? It was first suggested by Jaboulay, of Lyons, who tried it in 1899 for perforating ulcers of the foot, and Leriche brought it into prominence for gangrene. It had also been carried out for thrombo-angeitis obliterans, Raynaud's disease, arterio-sclerotic gangrene, and even for such conditions as ununited fractures, osteomyelitis, and female pelvic disturbances. The first patient on whom Prof. Gask had performed the operation was a Russian Jew, aged 34, who gave a three years' history of pain and swelling in one leg, the blood-supply of that leg and foot being seriously impaired. While in bed both legs appeared to be normal, but when he got up and began to walk one leg became dark blue and very painful. It was generally thought that he had some obscure vascular lesion, such as erythromelalgia. For the operation a portion of the superficial femoral in Scarpa's triangle was selected, and the artery stripped of its adventitious coat for an inch. The artery at first appeared white and contracted, then the limb became warmer than its fellow; blueness and pain disappeared; the man returned to work, and was still well two years after the operation. In a second case he had partial success, while in two others no success was claimed, though the patients were no worse.

In regard to the assumption that sympathetic fibres passed to the periphery by the arteries, Prof. Gask quoted observations published in 1924 by J. N. Langley. After section of the posterior tibial nerve at the tendo Achillis, he found that stimulation of the lumbar sympathetic still caused complete pallor of the pad of the foot and the toes. Section, in addition, of the musculocutaneous nerve on the dorsum of the foot greatly reduced the pallor obtained. Additional section of the anterior nerves just above the ankle nearly abolished the effect of the sympathetic. The ganglia of the sympathetic chain sent fibres to the immediately adjoining arteries, and the peripheral arteries received small filaments at intervals from the nerves accompanying them. Langley suggested that the effect of the periarterial operation in abolishing vasoconstriction was due to some cause other than section of nerve-fibres going to the periphery in the arterial sheath, and that it might be due to section of afferent fibres.

On the whole, said Prof. Gask, the results of periarterial sympathectomy were unsatisfactory, though occasionally it met with astonishing success. In senile gangrene good results were not to be expected. There was a discrepancy between the experimental and the clinical findings, and further knowledge was required as to the distribution and function of the sympathetic fibres. If the operation had done nothing else, it had certainly broadened our knowledge of the sympathetic system. In actual or impending gangrene, should the leg be amputated, or should an attempt be made to save it by rest in bed, warmth, the application of desiccating powders, perhaps aided by sympathectomy? Though amputation might be called for in senile gangrene as a life-saving measure, it should, he thought, be staved off by every possible means.

Discussion.

Mr. W. SAMPSON HANDLEY thought Prof. Gask's desire to draw a cautious conclusion had led him to give less than its due to periarterial sympathectomy. He had himself only lost one case of senile gangrene. The operation he did, however, was not that now described, but the periarterial injection of alcohol.[1] He exposed the femoral artery in Hunter's canal, and injected, at four points in its circumference, two or three minims of absolute alcohol into the outer coat of the artery, using for the purpose a very fine hypodermic syringe. He regarded this as a great improvement on sympathectomy, chiefly because immediately after the latter a contraction of the artery ensued, and some 15 hours of low circulation preceded the onset of vasodilator symptoms, the latter lasting only three or four weeks. This period of low circulation might be very dangerous to a patient who had threatening gangrene. Moreover, injection succeeded is cases which were not amenable to sympathectomy. The alcohol injection method was the simpler operation, and its greatest field was preventive—for cases showing spots on the toes, coldness, and pallor of the feet, and pain. He agreed that

[1] THE LANCET, 1922, ii., 173.

anatomical differences in individual patients, such as variations in the level at which the vasoconstrictor nerves ran into the artery, might cause lack of uniformity in results. Langley seemed to have omitted the crucial experiment of injuring the outer coat of the artery in the dog used. Mr. Handley quoted some classical experiments carried out by Lord Lister in 1845, from which he deduced that the tone of the arteries of the lower extremities depended on the integrity of the lower half of the cord. Surgeons, he said, were at liberty to draw conclusions from their own clinical findings when these were at variance with the views of physiologists. He showed colour pictures of cases illustrating the stages in his alcohol-injection method, and giving the after-histories, which were very gratifying.

Mr. PHILIP TURNER said he had not done periarterial sympathectomy, but had treated four senile gangrene cases by the method described by Mr. Handley. The first, the most successful of his series, was that of a man aged 70, who was operated upon in February, 1924. The big toe was gangrenous, and over the whole of the foot was solid œdema, a considerable patch of apparent gangrene was at the base of the second and third toes, and another over the heads of the metatarsals in the middle of the sole of the foot. The gangrenous process had been going on three months, and there was great pain and tingling. When he exposed the femoral artery in Hunter's canal he felt very disappointed, as it was a firm, solid calcareous structure, in which no pulsation was evident. Still, he proceeded with the operation, injecting 10 minims of absolute alcohol through four punctures. After the injection a grey ring formed round the femoral artery; 24 hours afterwards the pain had gone, 48 hours later still the swelling had disappeared, and next day the patches on the sole and dorsum had practically vanished; a few days later the patient was walking about. The granulating area healed only slowly, but he did not use silver nitrate, as he feared a restarting of the gangrenous process. A year afterwards the man was walking about, the wound had healed and the pain gone, and there had been no recurrence. The next case was in a generally unsatisfactory condition when seen; diabetes, an enlarged liver, bronchitis, and emphysema were among his troubles. Following the injection of alcohol there was an improved condition, with increased temperature in the part, but only for a few days, death occurring 10 days after the operation. Death would probably have taken place whatever treatment might have been employed, or if none was carried out. He described his other cases, the result in which was moderate but not very long-lasting. He was in favour of the method, and intended to continue with it in those cases which appeared to be favourable for it. There was always the alternative of amputation if injection failed, and giving patients this chance served also to prepare their mind for the larger operation if it should be necessary. The engorgement with blood of the vessels concerned certainly was a very helpful factor. He did not think the physiological experiments Prof. Gask described could be held to negative the clinical results which could easily be observed, especially as it was evident that physiologists could not yet explain exactly what happened. He agreed with Prof. Gask that every effort should be made to stave off amputation, especially as amputation for senile gangrene showed a considerable mortality

Mr. C. H. S. FRANKAU referred to two cases of gangrene of the extremities which he had had. One was a Pole, aged 50, who had the arteries typical of that race. The speaker had operated on the patient's right leg six months previously. On his second visit he had intense pain in the left ankle and foot, which were mottled and evidently the seat of commencing gangrene. He kept the man in bed a month, trying the effect of radiant heat, diathermy, and other measures, none of which mitigated the condition appreciably. So intense was the pain that he had to be kept continually under the influence of morphia. Having read Mr. Sampson Handley's article, he, the speaker, exposed the superficial femoral artery at the apex of Scarpa's triangle, and found it to be completely blocked, pulsation being absent. Absolute alcohol was injected, and the improvement was as dramatic as in Mr. Turner's case; from that moment the pain ceasing, no morphia was given after the operation, and the man left the hospital a month later, walking with crutches on his one leg. His death took place six months later, from cerebral hæmorrhage, it having had no relation to the operation. He had two other cases, of the ordinary senile type. On one of them he did periarterial sympathectomy, on the other he carried out alcohol injection. In regard to them he could not use the term "success" nor "failure": there was no real change in the limb, and amputation was not carried out. His fourth case was a complete failure. The patient had dry diabetic gangrene, and amputation had been recommended by the physician. Sympathectomy was done instead, under local anæsthesia. The immediate result was a stoppage of the intense pain, but though efforts were made to keep the area dry, the dry gangrene became a moist one and spread rapidly, the end coming in a few days.

Mr. A. TUDOR EDWARDS spoke of two cases in which he did sympathectomy of the brachial artery for Raynaud's disease—of the finger in one case, of the foot in the other. In the first of these the operation was done nine months ago. The superficial slough separated in three weeks, eventually coming off like the finger of a glove. Three weeks later a skin graft was applied, with satisfactory result. In the other case the man had already had his left foot amputated two years before for Raynaud's disease. The artery was split in Hunter's canal, the pain disappeared immediately, and the wound granulated well, but in four months the old condition began to come back and amputation was necessary.

Mr. J. E. ADAMS drew attention to the value of ligature of the common femoral vein for the kind of condition under discussion. He had carried it out on several patients. He had found the technique of periarterial sympathectomy of the common femoral difficult, as one could not be sure of the depth to which one was going. It was necessary to be certain of getting the alcohol into the right plane. Two of the cases on which he did ligature of the common femoral vein were ordinary senile gangrene, the patients having no sugar in the urine; two had gangrene with glycosuria. In a senile case, aged 70, without sugar in the urine, in which ligation was done, pain ceased immediately, and two years later there was only slight discoloration. No swelling or œdema followed the operation. In another similar case the patient, a year after the procedure, was walking two miles in a day. In one of the diabetic cases ligation failed, and amputation had to be done in the usual way. In another case he did ligature of the common femoral vein and alcohol injection in the artery. That patient recovered from the gangrene, and the popliteal pulse, which had disappeared, returned. In a third case, ligation of the vein was not followed by any obvious improvement, and amputation was performed at the seat of election. He believed that if these cases could be seen early enough, there was a good deal of scope for surgery, short of amputation. Section of tissue removed should always follow.

Mr. E. G. SLESINGER said he had done periarterial sympathectomy 17 times (on eight patients). Two of the cases were straightforward Raynaud's disease in the upper limbs, and it was difficult for sleep to be procured on account of the intense pain. The axillary artery was chosen for the sympathectomy. He preferred this operation to that of alcohol injection. He agreed that tissue removed should always be carefully examined. Twice he had done the operation in frank thrombo-arteritis obliterans. It was possible that the condition being dealt with was capillary dilatation, not arterial dilatation. He would not do

it again in thrombo-arteritis obliterans, but in the other cases he had been favourably impressed with the operation.

Mr. C. MAX PAGE said the operation of sympathectomy certainly relieved the subjective symptoms. He agreed with Mr. Slesinger as to the extraordinary variety in the appearance of the artery in different people when it was exposed. It was likely that the operation would be done increasingly in the near future, therefore it was of great importance that as much knowledge as possible should be obtained as to the arterial disease and the circulatory conditions present, examinations being made of middle-sized arteries in the immediate neighbourhood, with blood-pressure readings.

Mr. J. PATERSON ROSS said the suggestion had been made that the nerve-fibres stripped from the vessel in the so-called periarterial sympathectomy might be of afferent nature, not efferent. He showed a coloured diagram to explain the point. The muscle in arteries was believed to be in a state of tonus, and it was similar to that in striped muscle. The tone of striped muscle depended somewhat on the reflex arc, the afferent fibre of which started in the muscle, passed in by the posterior nerve root, and formed a synapsis in the cord, thence passing back to the muscle itself. There was evidence that that was the afferent track, because section of posterior nerve roots lowered the muscle tone, and that had been used for many years in the treatment of spastic states. Some afferent fibres passed from the blood-vessels to the cord, some perhaps carrying sensation, others serving the protopathic sense. When, therefore, an afferent nerve was cut, so interrupting the reflex arc, it was possible for the tonal effect of the vasoconstrictor nerves to be interfered with. Probably it was in the periphery that the vaso-constrictor fibres exerted their chief effect, and the varying character of the results obtained in senile gangrene might be attributable to the pathological changes in the different parts of the vessels.

Dr. PARKES WEBER said the symptoms indicating that gangrene threatened were: first, intermittent claudication in elderly people—a feeling of cramp and tiredness after walking a short distance; secondly, failure to detect pulsation in the dorsalis pedis artery, with coldness and a purplish discoloration of the tissues, especially when in the dependent posture; and, lastly, the formation of slight patches of discoloration and ischæmic ulcers. These early symptoms, properly treated by rest in bed and iodide of potassium, with a restriction of exercise afterwards, did not, in many cases, develop further, and surgery did not have to be considered.

Reply.

Prof. GASK said he did not take sides concerning the operation of sympathectomy. The discussion seemed to bring out clearly that clinicians had found, in a number of cases, definite advantage following the procedure; there was increased warmth in the limb and relief of pain. Mr. Ross's suggestion should lead to a fruitful line of work. The discussion also seemed to make it clear that sympathectomy was worth proceeding with. He did not lose sight of the fact that improvement usually followed up to a certain point from the mere taking of the patient off his legs and keeping him in bed.

LONDON POST-GRADUATE HOSTEL.

CEREBRAL LOCALISATION IN THE CLINICAL SUBJECT.

AT a meeting held at the Post-Graduate Hostel, Imperial Hotel, Russell-square, W.C., on Nov. 25th, Dr. GORDON HOLMES presiding, Dr. W. J. ADIE opened a symposium on this subject with an account of the localising signs in disease of the prefrontal lobes. He pointed out that the diagnosis was always uncertain, as most of the signs that are considered to be characteristic of disease of the frontal lobes were negative, none were constant, all might be absent in a given case, and all might be indirect results of a distant lesion. Mental changes were fairly constant and were important; they might appear in the loss of power to concentrate, loss of initiative, persistent punning and elementary joking. Dr. Adie related a number of illustrative cases, including some in which diagnosis had been made on the mental symptoms alone. He then described in detail two less familiar signs of frontal disease—namely, exaggeration of Mayer's reflex (proximal phalangeal reflex) and the peculiar grasp reflex which is sometimes found in the hand on the side opposite to the tumour. Every case he had seen in which a unilateral exaggeration of Mayer's reflex had been present had had a unilateral tumour on the opposite side. Any light touch on the palm caused the involuntary grasping movements of mixed flexion and extension; when the object was grasped the patient was unable to let go, and tightened his hold at any attempt to remove it. After it had been removed, the patient would open and close his fingers gropingly. There were other signs, and the speaker was hopeful that more would be found and that the "silent" areas would become fewer.

Jacksonian Epilepsy.

Dr. E. A. CARMICHAEL said that in true Jacksonian epilepsy the patient had a definite sensory aura. In a second type, the progressive convulsion, the patient remembered nothing, but the relatives noticed that the attack started on one side and spread thence; they alone could give any indication of the side of the brain that was affected. In a third type twitchings began, during full consciousness, in one limb, toes or fingers, and spread to the elbow, shoulder, &c. The patient could relate the exact sequence of the attack, but had no sensory aura at all, no gastric sensation, no numbness, and no ocular phenomena. Lesions in the parietal region were associated with numbness or some curious sensation; the sequence of the sensory phenomena did not always fit in with the anatomical relations of the post-central gyrus. In occipital lesions the patient complained of "lights in front of the eyes." Inquiry showed that these lights were on one side and were usually coloured red, green, and blue. These might be the only signs of an occipital tumour. Lesions in the uncinate gyrus were associated with a champing movement and a smacking of the lips, and a peculiar taste or smell which no one else present could appreciate. These fleeting sensations passed on into a dream state in which the patient was almost somnambulistic Disturbances in the posterior part of the temporal lobe often produced no physical signs. The speaker quoted one case whose only trouble was hallucination of people seen over his left shoulder and always passing away to the left as he turned to focus them. The tumour was on the right side. Lesions in the subtentorial region had been described by Hughlings Jackson and Dr. Gordon Holmes as causing tonic convulsions. The speaker, however, had seen 82 cases of gunshot wounds of the cerebellar region during the war, and had never seen anything that could be described as or compared with an epileptiform seizure. He thought the convulsive symptoms in these cases were due to hæmorrhage into the ventricles—certainly not to cerebellar disease. Localisation was considerably aided by a definite history of the nature of the attack and the phenomena that preceded it, the general convulsion, and the observations of the relatives. It must not be thought that all cases of Jacksonian epilepsy had cerebral tumours; in 71 gliomata investigated by him there were only 18 cases of epilepsy, and in 13 epitheliomata of the brain only seven cases showed epilepsy. Jacksonian epilepsy suggested an endothelioma rather than a glioma.

Help Given by the Visual Fields.

Dr. MACDONALD CRITCHLEY said that the optic pathway, on account of its length, was very apt to be affected by lesions within the hemispheres, and

that no clinical investigation was complete without a perimetric chart of the visual fields. Progressive restriction from without inwards was liable to occur in consecutive atrophy following long-standing papillœdema, and must in these cases be discounted as a localising sign. Tumours in the front of the under surface of the optic lobes might press on the optic nerve between the orbit and chiasma, producing rapid blindness in one eye only, with loss of central vision, especially for colours. Retinoscopy showed a characteristic picture of a pale sharply-cut disc on the blind side and vascular engorgement on the other. Lesions about the chiasma were mostly produced by the pituitary; pituitary tumours usually pressed on the chiasma from below and behind, those of the infundibulum from above and behind. A clear-cut bitemporal hemianopia was rather uncommon. If the tumour pressed on one tract only a homonymous hemianopia would result, with early involvement of macular vision, which was a physiological feature of tumours of this region. The result was an enlargement of the blind spot and a central or paracentral scotoma. This would be soon followed by peripheral defect on the temporal side, until the two fused to form an upper-sector defect, and later a complete hemianopia. The nasal field suffered last, being gradually restricted in a bean-shaped manner. Lesions between the chiasma and the cell stations produced a homonymous hemianopia, very different from that produced by lesions behind the cell stations, in which the macular fibres tended to escape. Lesions of the optic radiations in the temporal, parietal, and occipital lobes tended to produce a homonymous hemianopia, but as in the temporal lobe the visual fibres were splayed out, only a portion of them were usually involved by tumours in this lobe, and so the result would be a quadrantic hemianopia. In the parietal and occipital lobes the fibres were packed more closely and lay nearer the surface, and so were more likely all to be caught by a tumour. The points of distinction between lesions behind and in front of the geniculate body were that in the posterior tumours central vision tended to escape, the patient was often unconscious of his field defects, Wernicke's hemianopic pupillary reaction could be obtained, and "optic nystagmus" varied. In certain cases of superficial temporal tumour which touched without damaging the visual fibres, the patient would be unable to appreciate an object at the periphery on the side opposite to the lesion if it were presented simultaneously with another object on the other periphery.

Radiographic Localisation.

Mr. A. P. BERTWISTLE described a method of localisation of cerebral tumours by X ray, with a key radiogram and a "gyrometer." The key radiogram was prepared by photographing the half of a sagitally-divided brain and skull with a mixture of red lead and warm vaseline painted along the chief sulci. Over the head was fitted a scale made of 7 in. of watchspring with the ends connected by a piece of elastic; at 1 in. intervals seven strips of 4 in. spring were fastened at right angles to the central one. Silver wires were threaded through holes 1 in. apart in the verticals. The preparation was carefully orientated and radiographed, and the key thus provided formed a valuable localising guide for the central area. The gyrometer was a thin strip of celluloid tape provided with a cursor at right angles, and this served to localise the brain underlying a cranial defect in the living head. The speaker described a case of depressed fracture over the angular gyrus in which the site of injury was located radiographically.

Dr. G. E. GERKEN described a case of aphasia which had been under his care in Boston. The man was admitted about midnight with a parietal hæmatoma. Next day X rays revealed a crack of the inner table over the Rolandic fissure. Three days later he showed signs of consciousness. On the fourth day he began sentences, but was unable to finish them; on the fifth day he had a similar motor aphasia. As there was no increase in symptoms he was not operated on. Two years later he was seen in a State institution; he had got back the use of his arm after several months, but still had some aphasia.

The CHAIRMAN said that it was not possible to judge Dr. Gerken's case at this interval of time, but in general, if there were no progressive symptoms, it was better to leave well alone; any man was better with a whole skull than with a hole in his skull. He described a case seen by him recently—a woman who had had a series of epileptiform seizures of increasing frequency. Before the first she had had a momentary glimpse of two women in blue and white, with caps and aprons. One of them had a curious leer on her face, and the other appeared threatening. She had a feeling that this one was pulling her head round and dragging her eyes out of their sockets. In subsequent attacks she had rarely seen the figures, the seizures occurring more often at night, but the patient was still very conscious of this sensation of being pulled round. Treatment by suggestion had failed. Lately she had also had a curious smell and taste, and numbness in her right hand. There was definite evidence of a cerebral lesion, probably a cyst in the temporal lobe. Complex visual sensations were always due to lesions of the inner aspect of the temporal lobe. Where the visual cortex itself was the source of excitation, the patient saw simple flashes of light, with or without colour. Dr. Adie had put forward some definite positive signs of frontal lesions, but these were not found in every case, and so far no absolute rules could be made.

MEDICO-LEGAL SOCIETY.

CARBON MONOXIDE POISONING.

A MEETING of this Society took place on Dec. 2nd at the rooms of the Medical Society of London when, in the absence of the President, the chair was occupied by Mr. WALTER C. WILLIAMS, and Dr. DOUGLAS KERR (Edinburgh) introduced a discussion on the medico-legal importance of carbon monoxide poisoning.

One of the greatest social problems of the present day, he said, was the increase in the number of suicides. Every decennium showed an increase in the suicide rate in this and other countries. The chance of dying by suicide was more considerable than anyone not studying the statistics would imagine. One out of every 119 young men reaching the age of 20 ultimately died by his own hand; and last year, of all the males over 20 years dying in England and Wales, 1 in each 65 was a suicide. An interesting study was that of the changing methods in vogue among suicides. In former years the most frequent means of voluntarily ending life were hanging, drowning, cut-throats. These methods still prevailed, but no longer held the prime place, which was taken by poisons; and of the poison methods the most frequent was coal-gas (carbon monoxide). In Scotland not only was that the most frequent poison used, it was the most common of all methods of suicide. In 1899 Prof. Harvey Littlejohn investigated the suicide statistics of Edinburgh for the 30 years ending 1895, and found that the total of 298 did not include one of coal-gas poisoning. But for the years 1920-25 there were 353 suicides, of which 105, or 30 per cent., were due to the inhalation of coal-gas. In some other Scottish towns the percentage was even higher. The method was used by 42 per cent. of the women, as against 25 per cent. of the men. In England the number of suicides by this means had more than trebled in the last six years, while the number of deaths accidentally caused by coal-gas inhalation showed little variation.

The large increase in coal-gas suicides gave rise to several important medico-legal questions. Bakers' ovens and other fixtures in manufacturing establishments figured in the suicide cases as well as the domestic gas oven. Among the cases of death by accident were those in which there was a defective

gas main from which the gas percolated through the soil and poisoned the persons in the vicinity, as in the recent case at Peterborough. In Edinburgh, during the last six years, there had been only seven unquestionable cases of death by gas owing to accident. In many of the suicide cases the victims were found with their heads covered with coats or blankets, to ensure that the gas did its work thoroughly, the gas-tube being secured under these coverings. In some the gas-tube was found still clasped in the hand. In the case of one woman, she wore a mask which had been made out of the tea-cosy. But it must always be remembered that this staging might well be arranged around his victim by a murderer, the time chosen being when he or she was asleep. An interesting case which Prof. Littlejohn investigated was that of a labourer who was employed down a well. A post-mortem examination was ordered on account of the lividity noted after death. It had been said that on returning from work his clothes smelt strongly of gas. But the man left his work at midday on the Saturday, went to his home to dinner, and afterwards walked about the town, returning home about midnight, sleeping afterwards in the kitchen, where burned a coal fire. In the morning he was dead. When coal-gas had been inhaled in concentrated form, five or six hours' breathing of fresh air sufficed practically to clear the air from the system. In this man, though he had been walking about most of the afternoon and evening, the saturation was 70 per cent., therefore any gas from the well must be left out of account. He was gassed in the dwelling-house, but whether it was homicide or suicide could not be determined.

Four chief questions arose in connexion with this subject: (1) the possibility of a mistaken diagnosis; (2) the degree of toxicity and the amount of saturation needed to cause unconsciousness; (3) the time elapsing before a person became unconscious; (4) the rate of elimination. As to mistakes in diagnosis, rarely the appearance—very similar to that left by coal-gas—might be due to the post-mortem formation of nitroxy-hæmoglobin, as in a case reported by Haldane last year. Carbon monoxide gas united with the blood much more readily than did the oxygen of the air, and it caused death not by toxic action so much as by depriving the tissues of the oxygen which it displaced. When the saturation reached 50 per cent. there were distinct symptoms of malaise and weakness; when the 55 per cent. point was reached there was difficulty in walking, and beyond this unconsciousness supervened. With a rapid entry of gas the symptoms came on with a less degree of saturation. Immersion in a gas oven with the gas containing 22 per cent. of CO, as in Edinburgh, would result in unconsciousness, theoretically, in 30 seconds. Elimination of the gas during the first one and a half hours was slow, but after that the rate was accelerated.

Could measures be undertaken to limit recourse to gas for suicide purposes? Most of the CO was obtained from the water-gas which was added to coal-gas to increase its heating properties. The rate of accidental poisoning by gas was two and a half times higher in cities where water-gas was employed than in others. Any alteration in the composition of the gas supplied for domestic purposes did not seem to be a practical proposition. Parliament had inquired into the question of accidental deaths due to gas poisoning, but left the question of suicide alone. Yet there was no important increase in the number of accidental deaths from this cause. Fatal results had occurred when the penny-in-the-slot method of supply was used, and a woman suicide in Leeds borrowed the penny from a neighbour to get the 25 cubic feet of gas which ended her life.

Dr. KERR was of opinion that the great amount of publicity given to cases of suicide by this means had a bad effect on the ill-balanced section of the community, as they were so susceptible to suggestion. When an unusual means was reported in the daily press it was the experience that another instance by the same method soon followed. Ease and apparent freedom from discomfort also played a part in a miserable person deciding to terminate his life. A particular bridge with a low parapet had been for a long time a favourite venue for suicides, but when the authorities made a high parapet, edged with spiked railings, there were no more attempts there.

Discussion.

Sir WILLIAM WILLCOX agreed with Dr. Kerr as to the undesirability of broadcasting minute particulars of suicides, whatever the means taken, as imitation was a large incentive to crime. This was seen not very long ago when weed-killer was used by several people to get rid of those they wished removed. CO was, perhaps, the most insidious poison known. He was sorry Dr. Kerr did not enter into the symptomatology and treatment of the condition, and he asked whether any special treatment was pursued in Edinburgh in addition to the usual oxygen, fresh air, and stimulant treatment. Was injection of oxygen into the tissues or the intravenous use of a suitable solution of peroxide of hydrogen carried out? He had used the latter himself in some cases of the kind with apparent success. A further cause for disquietude was the increasing percentage of CO used in the coal-gas supplied. He spoke of a curious case which was in his wards recently, that of a woman who was admitted because of alleged coal-gas poisoning, and her colour was consistent with that idea. She had penny-in-the-slot gas, and finding that her room was a rather large one, he did not think the required saturation could have been produced. In the room was an empty chlorodyne bottle. Her blood showed only a 20 per cent. saturation with CO, and this would not produce unconsciousness. Dr. Webster found morphine in the urine, and the blood-urea was very high. The fatal issue was really primarily due to very inadequate kidneys, but she had taken two accelerators. This case conveyed a warning against hastily arriving at a conclusion; there should be a careful examination of all the circumstances. Sometimes natural disease simulated the symptoms of coal-gas poisoning.

Dr. ROCHE LYNCH suggested that the alarming increase in suicides by means of coal-gas might not appear quite so great if allowance was made for the increase of the population in the period under review. The rate per mille seemed the best way of arriving at a comparative estimate. He thought the provisions of the Dangerous Drugs Act had played a part in determining coal-gas as such a frequent means of taking life, as drugs formerly used for the purpose were now difficult to procure by ordinary people. Also, the increased average length of life might lead people of advanced years, the subjects of such diseases as cancer, to put an end to their sufferings. With regard to treatment in America the oxygen administered was mixed with 5 per cent. carbon dioxide in order to counteract the tendency to alkalosis which these people showed.

Dr. MORGAN FINUCANE, looking at the question from the standpoint of the public, said that if people determined on committing suicide they would do it by some means or other. He had been medical officer to the Gas Light and Coke Company, and it was his duty to attend inquests on cases of death from this agent. Could nothing be done by scientists to mitigate its lethal properties? He agreed that the increase in the figures shown was alarming, and that the gas was a very dangerous one. He urged more stringent regulations in regard to gas fittings, that no house should be inhabited until a most rigorous examination had been officially made of all pipes, and that there should be a periodic inspection of all gas mains. Electricity afforded a natural relief from the anxieties following in the wake of gas usage.

Mrs. BLANCO WHITE said she had been assured, by an official of the Ministry of Health, that a group of suicides by gas during recent years were men who had been badly wounded in the war and whose subsequent existence and suffering led to this fatal ending. That was confirmed by the Ministry of

Pensions. On the practical side, she suggested that chemists should try to incorporate in coal-gas something which would cause fits of sneezing in those inhaling it.

Dr. DANFORD THOMAS agreed that in these matters imitation had a bad effect, and that there was too much publication of details in these suicide cases. He had interviewed persons who recovered from gas poisoning, and they declared the effect was that of a pleasant dream. He advocated the placing of gas ovens and other receptacles at a greater height from the floor than was customary, then people would not feel they could so easily lie down to secure their passage from life.

Dr. W. D. NEWCOMB referred to statements in text-books that in cases of poisoning by coal-gas areas of softening were found in the brain and hæmorrhages in the basal nuclei. He had not seen these lesions in such cases.

Dr. BERNARD O'CONNOR said he would have thought transfusion of blood would have been the appropriate treatment for coal-gas poisoning, seeing the insidious way in which the poison affected the blood. He believed it was successfully employed some years ago.

Reply.

Dr. KERR said the mixing of 5 per cent. CO_2 with the oxygen used stimulated the respiratory centre, and elimination of the gas proceeded quicker. This method was held to have successfully replaced treatment by blood transfusion. The figures of increase would have appeared little less formidable if account had been taken of the increase of population, for the latter was relatively small over the period. In England and Wales in 1913 there were 276 cases of gas suicide, 149 accidental gas deaths; in 1923, 688 and 178 respectively, and in 1925, 762 and 163. In Scotland in 1913 there were 10 suicides from coal-gas, and 267 by other means; in 1923, 70; in 1924, 91; while the deaths by other means were 257 in 1923, 284 in 1925. Most suicides were committed between 45 and 55 years of age, and the number was very small after the sixty-fifth year. Accidental cases had increased by only 20 in six years. He had seen lesions in the brain after coal-gas poisoning of a character easily demonstrable to students. He agreed that electricity was the remedy for the evils which had been disclosed.

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.

A QUARTERLY meeting of this Association took place on Nov. 16th at the Horton Mental Hospital, and later at the West Park Mental Hospital, Epsom. Lieut.-Colonel J. R. LORD, the President, took the chair, and Dr. P. K. MCCOWAN read a paper written by himself and Dr. J. S. HARRIS on

Chronic Epidemic Encephalitis.

Hyoscine, they said, could be regarded as a specific in the treatment of encephalitic Parkinsonism. They had investigated carbohydrate metabolism as represented by the blood-sugar curve, and had made experiments on muscular tonus and on altered affectivity, as shown by the psychogalvanic reflex, and they had found that abnormality in these functions in patients with encephalitis could be partially corrected by hyoscine. In the normal person subcutaneous injection of 1/100th of a grain of hyoscine hydrobromide was followed, in 10 to 15 minutes, by dryness of the mouth and throat, a sensation of giddiness, some mental confusion, slurring of speech, and inability to walk straight. There was also marked impairment of accommodation, so that none but the largest print could be read. Later there followed a feeling of laziness or fatigue, and if left to himself the person would fall asleep and remain asleep for several hours. Thus it was evident than in normal people the effects of hyoscine were depressant—a result contrary to that seen in encephalitis. It practically all cases of this disease a suitable dose of hyoscine caused improvement; the general muscular rigidity was reduced, while tremors of the face and extremities and excessive salivation and lacrymation disappeared. The patient's alertness was also increased, articulation was improved, and some expressiveness crept into the rigid countenance.

The functional aura, went on Dr. McCowan, was found in encephalitics more definitely than in any other group of patients gathered in a mental hospital, and this, they thought, gave a clue to the discovery of an organic basis for the so-called functional nervous disorders and psychoneuroses. In encephalitis lethargica there might be subtle biochemical or biophysical abnormalities. The lesion involved the basal ganglia, a centre of prime importance in the instinctive and emotional life of man. Dr. McCowan further described laboratory investigations carried out in conjunction with Capt. S. A. Mann at the Maudsley Hospital. [Some of these they have already reported in THE LANCET, 1926, i., 802.] The effect of injecting 1/100 gr. of hyoscine was to cause hypoglycæmia, but there might be a secondary hyperglycæmia two hours after the glucose meal and the drug injection. Similar results were obtained with atropine. These drugs also caused inhibition of the external secretion of the pancreas and a general arrest of the secretions of the alimentary tract. The blood-sugar values obtained in encephalitis were consistent with the theory that it was a chronic toxæmia. The results of the injection of hyoscine simultaneously with the ingestion of glucose permitted of a classification of the cases into two groups: (1) those exhibiting Parkinsonism with a depression of blood-sugar; (2) those, not exhibiting Parkinsonism, in which the blood-sugar curve did not show improvement after the injection. Hyoscine could be given either subcutaneously or by the mouth, but the best effects followed a combination of the two methods; 1/100 gr. was injected in the morning, and 1/50th gr. was given by mouth during the day. Some of the unpleasant effects were combated by giving 1/10 gr. of pilocarpine. Some patients had been having hyoscine for two years, and no deleterious effects were traceable. The action of the drug was only temporary, and when it was discontinued there was a relapse into the former state. Stress was laid on the fact that these patients were still suffering from an active disease, not the mere after-effects of an acute process. The treatment must still be regarded as in the experimental stage. In a trial of various drugs in the treatment of chronic encephalitis two had been found very helpful—namely, tryparsamide and argotropin. These were given to all cases of both types. Tryparsamide seemed to gain access to the central nervous system in a way that no other arsenical preparation appeared to do, and no case had shown progress of the disease since it was given. The course was eight weekly injections of 2 to 3 g.

Dr. HARRIS demonstrated cases, and Major N. ROBERTS welcomed the guests to the hospital.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

EXHIBITION OF CASES AND SPECIMENS.

A MEETING of this Society was held in Sheffield on Nov. 19th, Mr. W. GOUGH (Leeds), the President, in the chair.

Miss FRANCES IVENS (Liverpool) showed a specimen of

Melanotic Sarcoma of the Clitoris.

The patient was aged about 58, 8-para, and very stout. She had noticed a small lump in the anterior portion of the vulva for a year.

The clitoris was replaced by a softish nodular growth, pigmented in patches, which extended on to the left labium minus and the prepuce of the clitoris was stretched over the tumour. The growth was movable on the deeper structures. In April, 1925, Miss Ivens excised the whole vulva as radically and deeply as possible. No enlargement of the inguinal glands could be detected and so far there had been no recurrence

The tumour consists of masses of spindle cells with well-stained nuclei arranged in an alveolar manner in a connective tissue stroma. Granules of brownish pigment are scattered through the connective tissue and are present in some of the cells, but in some areas pigment is absent. The tumour is covered by thinned-out stratified epithelium.

Cases of melanotic sarcoma of the clitoris, said Miss Ivens, were very rare, and said to be extremely malignant. It was possible that this tumour arose from the chromatophores or connective tissue pigment cells of the skin, and was therefore a melanotic sarcoma and not a sarcoma associated with altered blood pigment—or sarcoma hæmorrhagica. Miss Ivens also showed a specimen of

Endometrioma of the Broad Ligament.

The patient, aged 20, had suffered from severe dysmenorrhœa with profuse and prolonged menstruation from the onset when aged 15. Bilious attacks had been frequent, and two years ago there was severe abdominal pain with vomiting. The cervix was dilated in January, 1925, but the condition grew worse, and in December, 1925, Miss Ivens opened the abdomen, removed a swollen, kinked, and unhealthy-looking appendix, and incised some small cysts of the ovaries. In the right broad ligament close to but not adherent to the body of the uterus was a swelling the size of a large marble, dark in colour. There were no adhesions. It was enucleated and the peritoneum stitched. The tumour proved to be a cyst containing dark tarry fluid, was lined by cubical epithelium, and showed in its wall typical endometrial stroma and glands embedded in and surrounded by fibrous tissue.

This case, said Miss Ivens, was interesting as it supported the view that endometriomata were due to fœtal displacement of Müllerian tissue and not to endometrial grafts. A somewhat similar specimen, belonging to Dr. Everard Williams, had been shown at the Royal Society of Medicine last year.[1]

Ovarian Tumours and Uterine Tumours.

Dr. J. W. BRIDE (Manchester) showed specimens of ovarian tumours.

CASE 1.—He saw the patient, a girl of 15, on Sept. 29th last on account of persistent vomiting and acute left-sided abdominal pain. Her pulse-rate was 130 and temperature 101° F.; there was great rigidity in the hypogastrium and inability to pass water. The symptoms dated from a menstrual period about a week before, and there had been regular menstrual periods since the onset of menstruation in August, 1925, always with dysmenorrhœa. An indefinite mass was to be felt in the left iliac region. Ovarian cyst with twisted pedicle was diagnosed and at operation a dermoid cyst, black in colour and about the size of a fœtal head, was found lying in the utero-vesical pouch. The right tube and ovary were normal. The cyst was removed and the patient made a good recovery.

CASE 2.—Fibromata of both ovaries were found in a virgin of 19 years complaining of pain and swelling in the hypogastrium with primary amenorrhœa. For her age the patient was distinctly childish and she had had no molimina. A hard mass, non-mobile and tender, was felt in the left iliac region, and per vaginam the pelvis was found to be filled with hard nodular growths. At operation Dr. Bride found the large left and smaller right ovarian tumour, and, being doubtful of their nature and feeling sure that all ovarian tissue was destroyed he performed panhysterectomy. There was no ascites. The patient made a good recovery.

Dr. Bride said that Hoon, writing in *Surgery, Gynecology, and Obstetrics* in 1923, had stated that fibromata of the ovaries might occur at any age after puberty, that there might be comparatively few symptoms, that ascites did not necessarily mean malignancy, and that menstruation was usually normal. In text-books it was often said that ascites was found so often with fibromata as to be almost a symptom. Ought not this statement to be modified? In the cases he had seen ascites had never been present. Pain, he thought, was in this case an important symptom in making the diagnosis against fibroids.

MR. J. ST. G. WILSON (Liverpool) described an unusual case of carcinoma of the cervix.

A nullipara, aged 30, married seven years, complained of intermenstrual bleeding for four months. The cervix was replaced by a crater, ulcerating, friable, and bleeding; the supravaginal cervix was thickened and the uterus fixed. There was albumin in the urine. At operation growth was seen on the surface of the uterus. The patient died ten days afterwards; the specimen showed infiltration of the whole uterus; the tumour was a squamous-celled carcinoma, and secondary growths were found in the lumbar glands.

Dr. E. O. CROFT (Leeds) commented on the rarity of spreading to the corpus.—Dr. K. V. BAILEY (Manchester) asked if sections of the upper portion of the growth had been cut to exclude its being a different growth from the cervix.

Prof. W. F. SHAW (Manchester) showed a case of acute torsion of a uterus containing a fibromyoma.

The patient, aged 70, had complained for 18 months of recurrent attacks of nausea which had been put down to biliousness, but on the last occasion her doctor had examined the abdomen and found a large, hard, tender tumour which, she stated, had been there for over 25 years. The tumour was very hard, extended to the umbilicus, was apparently fixed to the uterus, and was extremely tender.

At operation it was found that the fundus uteri contained a fibroid the size of a fœtal head and of stony hardness due to calcareous degeneration. The uterus and appendages were twisted round in two complete turns, and so had formed a narrow pedicle just above the level of the internal os no thicker than a man's finger. The broad ligaments and tubes were of a deep purple colour, many of the veins were thrombosed, but in some the blood was still fluid, so apparently there was a small circulation still kept up. The tumour was easily removed at the site of the torsion and the patient made an uninterrupted recovery.

Prof. M. H. PHILLIPS (Sheffield) described a case of

Advanced Abdominal Pregnancy.

His object, he said, was to draw attention to the difficulty of clinching the diagnosis of an advanced abdominal pregnancy by the ordinary means of examination. In the present case, although palpation failed to define any part of a fœtus in the abdominal tumour, an X ray photograph by Dr. J. L. Grout had shown not only a fœtus, but also a position and condition of that fœtus which could best be explained by its being dead and in an extra-uterine sac.

Two and a half years ago the first pregnancy of the patient, whose age was 30, ended in miscarriage at 11 weeks and a dangerous attack of pelvic peritonitis. Menstruation was scanty afterwards, but she did not miss a period until March, 1926. Her last period was on Feb. 13th. There was a slight show unaccompanied by pain nine weeks after. Morning vomiting, secretion in the breasts, steady enlargement of the abdomen duly followed. She quickened at four and a half months and felt movements daily until Sept. 4th. On that day she had severe abdominal pain accompanied by a dark bloody discharge and also diarrhœa and vomiting. Premature labour was suspected and her doctor took her into a maternity home. The external os just admitted the finger-tip but not more, and in the course of six days the pain and vomiting ceased and the patient was sent home.

No further fœtal movements were felt, however, and the breasts and the abdomen lessened in size. A slight, very dark, bloody discharge occurred daily. When seen by Prof. Phillips on Oct. 21st (36 weeks after the last period) she had a globular elastic mass visibly distending the abdomen and reaching from the pelvic brim to a point 2 inches above the navel. It possessed none of the signs of an enlarged uterus and no fœtal parts could be made out. On vaginal examination the cervix was soft, the os was closed to the finger, and bimanually the slightly enlarged body of the uterus could be felt behind and to the right of the lower pole of the abdominal tumour, which could just be reached at the pelvic brim. The pelvo-abdominal tumour felt just like an ordinary cystadenoma of the ovary.

The abdomen was opened on Nov. 12th, and on incising the peritoneum a pint or so of thin clear fluid escaped from a localised space, within which was exposed a second sac—the amnion—closely shrouding the fœtus. This sac contained rather less than half a pint of thick, greenish, opaque fluid. Both fluids were odourless. The fœtus was lifted out and the cord divided. The sac was now seen to line the true pelvis and the abdominal cavity to above the umbilicus. The transverse colon, adherent to the abdominal wall, formed the upper limit of the gestation sac. The placenta was found plastered on the upper half of the sacrum and the adjacent lower half of the lumbar spine. It was of a dull grey colour and appeared bloodless. No attempt was made to separate it from the underlying aorta and other large vessels. The patient was now going on well.

Dr. CROFT demonstrated a specimen showing axial rotation of a fimbrial cyst.

Mr. W. W. KING (Sheffield) read a paper on Some Aspects of Concealed Accidental Hæmorrhage, discussion on which had to be postponed.

[1] THE LANCET, 1925, ii., 1228.

Reviews and Notices of Books.

INCAPACITY OR DISABLEMENT IN ITS MEDICAL ASPECTS.

By E. M. BROCKBANK, M.B.E., M.D., F.R.C.P., Hon. Physician, Royal Infirmary, Manchester. London: H. K. Lewis and Co., Ltd. 1926. Pp. 120. 7*s.* 6*d.*

THE certification of incapacity or disablement, whether as the result of disease, injury, or accident, is a responsible duty which devolves upon most medical men in active practice, more especially upon those concerned in National Health Insurance practice. The widespread effects of the Workmen's Compensation and Employers' Liability Acts also impose upon medical practitioners important duties in this regard. The growing tendency to the development of pensions schemes for workers will naturally increase these duties and bring about special problems in assessment of incapacity and its certification. The fact that disputes upon such questions are inevitable, and that they often have to be settled by arbitration and sometimes by litigation, has resulted in a specific legal interpretation of certain terms in more or less common use. It is necessary for those giving certificates in connexion with disability or incapacity claims to have some knowledge of these special meanings, and some acquaintance with the law affecting certification in these matters. Dr. Brockbank, of Manchester, who has had a wide experience of insurance problems, has published a book which we can cordially recommend. The information it contains was collected for his own guidance, but will prove of the utmost value to others engaged in practice. He begins by defining incapacity or disablement, and points out that the law distinguishes between "incapacity to work" and "incapacity for work"—the former denoting total disablement for all work, while the latter means only some disability which restricts working capacity. The effects of accident and disease upon the working capacity are considered from the points of view of the worker and of the employer. The medical and surgical causes of disablement are next considered, and the alphabetical arrangement adopted facilitates reference. The influence of each upon the working capacity is described in an interesting way, and illustrative cases are quoted. In conditions where disease such as aneurysm, heart affection, or epilepsy has been a factor in death during employment, the circumstances in which claims have been successful or unsuccessful are described, and authorities are quoted.

Dr. Brockbank's book is timely in its publication, and it should serve a useful purpose.

RENAL SURGERY.

By F. McG. LOUGHNANE, F.R.C.S., Surgeon to St. Mary's Hospital, Plaistow; Assistant Surgeon, All Saints' Hospital for Genito-Urinary Diseases. London: Longmans, Green and Co., Ltd. 1926. Pp. 210. 10*s.* 6*d.*

THE avowed object of the author is to convey to the student and general practitioner an up-to-date knowledge of the surgery of the kidney in as concise a manner as possible. There are four preliminary chapters which describe the anatomy of the kidney, the changes in the urine in renal disease, the estimation of renal function and pain in kidney disease. The following chapters are devoted to the several diseases which attack the kidney, ending with one on operations.

In the interests of conciseness, we may suppose, dogmatic statements are made, some of which are by no means generally accepted. For example, the author says that in renal tuberculosis ureteric catheters should always be passed on each side. No mention is made of any possible danger associated with this procedure, the ill-results of which, as Wildbolz points out, may not be manifest for many months. Again, in bilateral stone it is recommended to remove that from the more damaged kidney and to wait three to four months before taking the stone out of the healthier one. Many surgeons prefer to reverse the procedure and at any rate save the less affected organ. We are told that nephrectomy for hydronephrosis should never be performed unless "absolutely essential," as in most cases functioning renal tissue is present. This is true, but we are not informed how uncertain are the results of plastic operations upon the ureter and pelvis, nor when nephrectomy is regarded as absolutely essential. Mr. Loughnane says that the renal pelvis should never be injected under anæsthesia, because damage may be done. But if a proper apparatus be used, injury by injection is impossible, and the real objection to anæsthesia is that the patient cannot hold his breath to have the pyelogram made. This applies equally to children in whom the author, a few pages on, says the injection may be made under general anæsthesia. On page 77 the statement is made that hydronephrosis can be cured by renal sympathectomy. The evidence, however, on the value of this fascinating operation is, up to the present, anything but conclusive. Possibly ureteric stone is not considered to come under the term renal surgery, for there is no systematic account of this condition and how to deal with it. Among functional tests, the author places most reliance upon the indigo-carmine and the urea-concentration test. He does not believe that a blood-urea estimation is so good an index of suitability for prostatectomy. We are glad to see that the long sojourn of a catheter in the ureter is deprecated in more than one place.

The book is nicely produced, with some good pyelograms; the illustrations of specimens would have been clearer if reproduced from drawings rather than from photographs.

THE X RAY IN EMBRYOLOGY AND OBSTETRICS.

By W. A. NEWMAN DORLAND and M. J. HUBENY. London: Henry Kimpton. 1926. Pp. 420. 50*s.*

EMBRYOLOGY has been the subject of radiological research from its earliest days. This volume is rather an epitome of the extensive literature on the subject than an original contribution—in fact, it is difficult to find evidence of any original work, even the illustrations being attributed to other sources. The first chapter, which is typical of the rest, is on the influence of X rays on living tissues and consists of 24 pages which cover an appended bibliography of something like 250 references; the authors are scrupulously careful to give credit to the correct source of every observation recorded. The sincere attempt to bring together the work of other people by this method has led to an uneven compilation with serious gaps. For instance, the account of embryonic development of the osseous system is most incomplete, and the authors give no description of their own investigations or determinations of the times of the appearance or union of the various epiphyses. The carpus is satisfactorily described, but only three bones of the tarsus are mentioned. Some of the statements are not clear; for example, the authors, quoting Pryor, say, "The epiphysis of the ulna shows ossification in the sixth to eighth year of the postnatal growth, and in the radius about the eighth to tenth month"—a sentence which implies either that these bones have only one epiphysis each or that the epiphyses at each end appear simultaneously. We can find no other reference to these important epiphyses.

We have, first, an account of the cardiovascular system as shown by means of radiograms of opaque injections, and a more complete description of the various congenital and developmental bony abnormalities. The second half of the book is devoted to the obstetrical uses of radiology, and a good account is given of the various methods of radiological pelvimetry and the X ray diagnosis of normal and abnormal pregnancy. The last 100 pages describe various monsters, many of which have been radiographed.

Those illustrations, which have been reproduced from published articles and not from originals, have lost much detail in the double reproduction. Those on pp. 68, 181, and 299, to give only three examples, are valueless. The illustration on p. 163 is upside down.

A compilation of this type, although it may contain a wealth of information carefully brought together and well indexed, inevitably lays itself open to criticism. Its merit is that anatomists, radiologists, and gynæcologists will find in its pages information difficult to obtain from scattered literature and, on the whole, well epitomised. This purpose would have been better served had the authors given the titles of the articles that are quoted in the bibliographies at the end of each chapter.

THE SURGICAL TREATMENT OF SPINA BIFIDA.

Zur Bewertung der chirurgischen Behandlung der Spina Bifida. By Dr. KARL M. STOCKMEYER, Basel. Berlin: S. Karger. 1926. Pp. 46. M1.80.

THIS slender monograph is based on some 42 cases from the records of the Children's Hospital in Basel, and on 171 cases from the literature, a total of 213. Numerous tables are given of the results of operation in the different types, the following being considered separately: meningocele, myelocystocele, meningomyelocele, meningomyelocystocele, and spina bifida cystica. Head, cervical, dorsal, lumbar, lumbosacral and sacral varieties are distinguished. Details are given of operative procedures. Slight though it is, the book contains a singularly complete investigation of a subject that has been rather neglected, and may conceivably serve to modify the pessimistic view usually taken of the treatment of these congenital malformations. As it is, the figures given by Dr. Stockmeyer are depressing enough: mortality-rate of all cases operated on, 46 per cent.; improvement or cure of existing paralyses, 3·9 per cent.; stationary condition after operation, 79·8 per cent.; aggravation of symptoms after operation, 16·2 per cent.

MODERN OPHTHALMOLOGY.

A Practical Treatise on the Anatomy, Physiology, and Diseases of the Eye. Fifth edition. Revised, enlarged, and rewritten. By JAMES MOORES BALL, M.D., LL.D., late Ophthalmic Surgeon to the St. Louis City Hospital. Philadelphia: F. A. Davis Company. 1926. With 598 text illustrations and 24 coloured plates. Pp. 721.

THE first edition of this work appeared in 1904 as a volume of 820 pages. This fifth edition is practically a new book, most of the chapters having been rewritten and much material added. The work is now bound in two volumes, each being about the size of the original one. Several well-known ophthalmologists have coöperated in the production of the work, and the result is a complete text-book of the embryology, anatomy, physiology, and diseases of the eye, which can hold its own in comparison with other first-rate text-books on a similar scale, such as those of Fuchs and de Schweinitz. This edition is dedicated to the Ophthalmological Society of the United Kingdom, of which the distinguished author has lately become a member, and there are several references to the recent work of British ophthalmologists. It is, of course, impossible to make a text-book really exhaustive. For instance, the anatomy of the ciliary region is given in this book in considerable detail, including some of the sections published by Prof. Arthur Thomson. The functions of the ciliary muscle are less satisfactorily dealt with, and no mention is made of Thomson Henderson's researches on the subject. Again, the slit-lamp with binocular corneal microscope, which is now considered by several modern ophthalmologists as an essential part of their equipment, receives only cursory mention. There are certain inconsistencies in different chapters. In that on sympathetic ophthalmia the treatment by salvarsan is briefly noted. Under "salvarsan" in the chapter on therapeutics written by Dr. W. F. Hardy its use is said to have been followed by extremely satisfactory results, but in neither place is there any hint that success is dependent on the blood count. These examples are given only to show that it is well-nigh impossible for a large text-book to keep quite up to date. The most stimulating text-books are those which do not attempt to be exhaustive, but make apparent the personal message of the author.

Dr. Ball's work, however, is eminently readable and reliable. The print is luxurious and the illustrations excellent.

FACTS ON THE HEART.

By RICHARD C. CABOT, M.D., Professor of Medicine and of Social Ethics at Harvard University. London and Philadelphia: W. B. Saunders Company. 1926. Pp. 781. 35*s*.

To study the living rather than the dead has been the fashion of pathology in recent years, and the pathologist of to-day tends to frequent the experimental laboratory and the ward as well as the post-mortem room. That morbid anatomy correlated with clinical observations still affords a most fertile field for research must not be forgotten; this lesson, in its special application to cardiology, is exemplified in Dr. Richard C. Cabot's stimulating book. Dr Cabot has here followed the same attractive method which he adopted with so much success in the teaching of students, reasoning from the post-mortem to the clinical findings. His material consists of nearly 2000 cases in which the cardiovascular system was involved, in a consecutive series of 4000 autopsies performed at the Massachusetts General Hospital over a period of 23 years. Such a wealth of material provides much food for thought and speculation. The critical reader will not see eye to eye with the author in all his sweeping generalisations, but he cannot fail to be grateful to him for providing so many protocols, both clinical and pathological, copiously illustrated with beautiful photographs, radiograms, and charts. The facts are there, and on those facts the reader can base his own conclusions.

The common types of heart disease are rheumatic, syphilitic, and hypertensive. These three constitute rather more than 90 per cent., while acute and subacute endocarditis account for less than 10 per cent. of the cases in this series. From a pathological standpoint angina must be regarded as a symptom complex rather than as a definite entity, for it has no constant anatomical basis. The section devoted to hypertensive heart disease is of particular interest. In this group, which in numbers exceeds that of all other groups of heart disease put together, the author includes all cases of enlarged heart which were not associated with either chronic pericarditis or with any valvular lesion. He believes that the condition is essentially independent of both nephritis and arteriosclerosis. In only one-third of the hypertensive cases did death result from heart failure, while in the remainder it was due to cerebral hæmorrhage or to some intercurrent disease. Another lesion which frequently remained latent for 15 or 20 years after the original infection without producing symptoms was syphilitic aortitis, but after clinical manifestations made their appearance death usually followed within two years. Attention is called to the frequency with which both pericarditis and mitral stenosis are missed during life; while, on the other hand, it is surprising to find that in seven cases only out of the whole 1906 investigated was mitral incompetence present post mortem unassociated with stenosis. It was, in fact, one of the rarest of valvular lesions.

Dr. Cabot is inclined to be hard on the clinician, and we must hope that he is over-stating his case when he says that in his experience in most patients diagnosed as suffering from heart disease the heart is perfectly sound. Conclusions based on such an extensive research cannot fail to command attention, but the statements that myocarditis is not clinically recognisable, and that the sounds produced in pericarditis are indistinguishable from intracardiac murmurs, will not pass unchallenged. How far one is

justified in applying evidence derived solely from fatal cases to heart disease in general is an open question; but this doubt in no way detracts from the value of the observations recorded in Dr. Cabot's book, which forms a valuable contribution to our knowledge of cardiac pathology.

THE QUARTZ MERCURY-VAPOUR LAMP.

Its Possibilities and Uses in Public Health and General Practice. By J. BELL FERGUSON, M.D., D.P.H., Medical Officer of Health, Tuberculosis Officer, and School Medical Officer, County Borough of Smethwick. With an introduction by Sir HENRY J. GAUVAIN, M.A., M.D., M.C., Medical Superintendent, Lord Mayor Treloar Cripples' Hospitals. London: H. K. Lewis and Co., Ltd. 1926. Pp. 106. 6*s*.

THOUGH books on ultra-violet therapy are accumulating at a great rate there is plenty of room for one by Dr. Ferguson, who, as medical officer of health, tuberculosis officer, and school medical officer for the County Borough of Smethwick, has had excellent opportunities of seeing the beneficial effects of this form of therapy on the ailments for which it is suitably prescribed. He holds that for the man in general practice and for the busy medical officer of health the quartz mercury-vapour lamp is the only practical apparatus, and his remarks on treatment are restricted to this source of radiation.

The first two chapters are devoted to a brief historical sketch and to the physical, chemical, and physiological properties of ultra-violet radiation. Then follow chapters on technique, dosage, and the possible dangers of this form of therapy. The next section describes the actual working of a modern public health department, with details of the clinic, staff, and equipment necessary for its maintenance, while a discussion follows on types of disease met with in general practice which are benefited by ultra-violet radiation. The succeeding pages contain many useful hints to beginners, including a table of suggested initial doses suitable for a large variety of complaints.

The author is both critical and enthusiastic of the future of ultra-violet therapy, for on p. 98 he says: "Ultra-violet radiation should be available in every infant welfare scheme in every town. Prophylactic use of ultra-violet radiation in the first year of life would banish rickets, tetany, and spasmophilia from our infant population." It may be hoped that opportunity to test this optimism will not be lacking.

MEDICAL CASE-TAKING.

By ALEX. MILLS KENNEDY, M.D. Glasg., Professor of Medicine, University of Wales, and Director of Medical Unit, Welsh National School of Medicine, Cardiff. London: Edward Arnold and Co. 1926. Pp. 148. 5*s*.

Prof. Kennedy has written a guide for procedure at the bedside to help the clinical clerk entering upon his duties for the first time. We believe the book will be of service as a brief introduction to clinical work rather than as a guide-book to be carried round and consulted at intervals. It presupposes that a preliminary training in physical signs and laboratory methods has already been given; for this reason, doubtless, certain axioms have been omitted, but it is hardly safe to assume that the junior student has mastered the elements of clinical examination. Since Prof. Kennedy has produced a useful little book which should be popular among students in other schools than his own, where clinical instruction may not always precede ward work, it would be well, in future editions, to treat the reader as quite a beginner. In dealing with the heart the student is instructed to mark the position of the apex beat with a skin pencil; but no definition of the apex beat is given and he may possibly be confronted with a large area of apical pulsation and be unable to decide which point constitutes the "apex beat." For the rest, the book is well written, concise, and clear, and, on the whole, accurate. The author mentions Austin Flint's murmur (p. 78), but not Graham Steel's. In describing certain types of respiratory movement no mention is made of the "inverted" type frequently met with in children and only scant attention is given to the value of eliciting tactile fremitus in the examination of the thorax. In discussing the palpation of the spleen Prof. Kennedy states "when there is some slight enlargement the lower edge of the spleen may just be palpable below the costal margin." It is usually accepted that a palpable spleen is probably at least twice or three times the normal size. Among minor points calling for criticism is the printing of the symbol for hydrochloric acid as "H.Cl."

In these days when the student is much distracted from the wards by laboratory work, it is satisfactory to see that in our schools the foundations of clinical medicine are still well and truly laid.

THE MEDICAL DIRECTORY, 1927.

Eighty-third annual issue. London: J. and A. Churchill. 1927. Pp. cviii.+2163. 30*s*., post. 1*s*.

IN our office the advent of a new issue of the Medical Directory is hailed every year with satisfaction, for by the late autumn its predecessor, in spite of a stout binding, has become thumbworn and a little ragged. This is hardly surprising, for the book is more used than any other on our shelves. It is not insular prejudice that makes us prefer the scope and format of this Directory to that of corresponding publications issued in other countries; experience has convinced us that desirable information about doctors is given more clearly here than in most similar works, neither cross references nor a good memory for symbols and abbreviations being required. There are 1405 more names in the book this year than last, the increase being divided fairly evenly over the various sections except the Services, where the diminution which began in 1922 still continues. The accuracy of the list is very high, but we cannot help still regretting the absence of the asterisk which used to show so clearly which practitioners had failed to respond to requests to confirm the information and bring it up to date. In the list of Titles Conferred there are some trifling inaccuracies and one or two names whose bearers are deceased. A little space has been saved by omitting unnecessary details of London medical societies, but the list of coroners which has disappeared will be missed. We congratulate the Medical Directory on its eighty-third birthday and rejoice in the assurance that in spite of its years its circulation is unimpaired.

DISEASES OF THE EAR.

Hunter Tod's Diseases of the Ear. Second edition. Revised and largely rewritten by GEORGE C. CATHCART, M.A., M.D., Consulting Surgeon to the Throat Hospital, Golden Square. London: Humphrey Milford, Oxford University Press. 1926. Pp. 333. 10*s*. 6*d*.

As it is nearly 20 years since the late Mr. Hunter Tod wrote his excellent little manual on diseases of the ear, considerably more than a mere revision has been necessary in the preparation of a new edition. Dr. George C. Cathcart, who undertook the work and who has done it well, has rewritten portions of the book and rearranged a great part of it without materially increasing its size. After a short introduction on acoustics, he has brought the description of the anatomy and physiology of the ear together into one chapter; and this is followed by another on examination, including the testing of the auditory and vestibular systems. This is an improvement on the original scheme of the book, where these subjects were scattered through the various chapters on external ear, tympanic membrane, and middle ear. The account of the labyrinthine tests is particularly clear for so abbreviated a description. The book presents, in a brief and easily read form, just the information required by the practitioner.

THE LANCET.

LONDON: SATURDAY, DECEMBER 11, 1926.

EPSOM COLLEGE: THE NEW SANATORIUM.

WE publish to-day an appeal from Dr. RAYMOND CRAWFURD, the Chairman of the Council of Epsom College, for the provision at the school of a new sanatorium, with an isolation block attached. The existing sanatorium is, Dr. CRAWFURD says, and as the many doctors who have visited the school know, quite out of date both in the accommodation which it offers and in its arrangement, making it uneconomical in working while providing no proper facilities for the isolation of infectious cases. Having regard to the fact that Epsom College, which now takes its place among the large public schools of England, had its origin in medical enterprise, it is in a sense a reproach to the medical profession that the school, with which their interests are so closely bound up, should not provide, through its machinery for the maintenance of the health of its scholars, a model to other schools; it should be in a position to deal with accidents, with sickness, and with infections among its scholars on the most modern and efficient lines. But for material reasons it can do nothing of the sort. The school is healthy, and unremitting attention ensures that it should be so, but it is without the proper equipment for the purpose.

The provision of a new sanatorium and isolation block at Epsom College is, in fact, now a most pressing need, for the well-equipped isolation block, which is a necessary part of the sanitary accommodation of a public school to-day, is represented at Epsom by a wooden structure with a limited life. The authorities at Epsom appeal to the practitioners of the country to come to their assistance, but before doing so they have made a thorough and careful inquiry into all the circumstances. The experience of schools like to Epsom suggests that the main sanatorium should afford 20 beds, while the isolation block should contain 40 beds for time of epidemic. The medical officer of the College, with the aid of a distinguished hospital architect, has prepared outline plans for a model sanatorium and isolation block of this capacity, and the estimated cost of the new buildings, though economy has throughout been considered, is £25,000—£15,000 for the sanatorium and £10,000 for the isolation unit. This, of course, is a very large sum of money, and the appeal made in our columns concerns in its practical application a profession which cannot be called a lucrative one as a whole. It is true that a small gift—only 10*s.*—from every medical man on the Register would result in the immediate finding of the necessary sum, and considering the inclusive nature, from the professional point of view, of the benefits offered by the Epsom Foundation, it is right to say that the claim upon the members of the profession is also inclusive. There are excellent reasons why all should give in ratio to their ability. Free education to the needy sons of deceased or disabled medical men, and the provision of pensions to aged or infirm medical men or to the widows of medical men, form the objective of the Royal Medical Foundation. Those familiar with the business side of medical practice in this country—those who know its emoluments, its strains, and its risks from early disablement or premature death—realise fully that a great section of the profession and their dependents must be found every year in a position when the free education of a child is a boon beyond description in value, while the alleviation of more immediate distress, through pensions to aged doctors or the widows of doctors, may mitigate situations whose real character has to be known if their bitterness is to be appreciated. The Foundation, despite both general support by doctors, and many signal acts of individual generosity, has no pecuniary surplus whatever; its carefully husbanded money is all required to finance the educational and pension systems; thus Dr. CRAWFURD'S suggestion is a logical one that this great and necessary charge for the maintenance of the health of the scholars should be met in the medical profession by a self-imposed poll tax. But the thing that is logical is not always the thing that gets done, and, while we endorse heartily Dr. CRAWFURD'S plea for an immediate collection on a capitation basis, we agree with him that it would be idle to look only here for the large sum required.

Long division sums may suggest an answer to the problem on paper, but in fact, though much money, it is hoped, will be obtained from a mass of small subscriptions, individual donations of larger sums will be needed. It is fair to look to the public for assistance here, for Epsom College plays a great professional part, and the public freely acknowledges indebtedness to the profession. The College, although having a distinctive connexion with medicine, possesses a Foundation moulded on that of Eton or Winchester—that is to say, that, while the best facilities for the education of the scholars on this Foundation are provided, a welcome is extended, for the enjoyment of those facilities, to the children of parents who are able to meet the ordinary public school charges. Doctors are in a good position for bringing to the notice of all sections of the public—the wealthier sections as well as those less fortunate—the value of any public movement, and we cannot think of a direction for the pecuniary endowment of medicine that would be more highly appreciated by doctors than support for Epsom College in its efforts for the health and safety of the boys. The position of a medical man incapacitated or deeply impoverished, while his children are at an expensive school age, and equally the position of a widow of a medical man who has died before any opportunity of saving has occurred, are particularly pathetic. No words are needed to prove this, and a plea for subscriptions based on such facts would surely bring large returns if it were largely advanced. The authorities at Epsom, in recognising their responsibilities before any misadventures have brought them home, are taking a brave step. They must be supported.

THE CONTROL OF PERIPHERAL CIRCULATION.

THE nervous control of the peripheral parts of the blood-vessels which supply the skin and muscles of the limbs is undoubtedly very complex, but the clinical observations recently discussed at the Royal Society of Medicine (vide p. 1215 of this issue) make it desirable to consider what is known of it from physiological experiment. Surgeons report cases in which division of the nerve plexus around the main artery supplying a limb has been followed by an increase in the blood-flow through the skin of that limb, as shown by increased warmth and by flushing of the part, and this effect has been used with

variable success as a means of staving off gangrene. It is certain that in the absence of any change in arterial and venous pressure, increased blood-flow to any part of the body can only be brought about by arteriolar dilatation, and where the skin is flushed it is evident that there must be in addition a dilatation of the capillaries and small venules. If, indeed, these phenomena follow periarterial neurectomy it behoves us, if possible, to explain them in terms of our present physiological knowledge. Histological investigation has shown beyond dispute that the arterioles, and possibly the capillaries, are provided with both motor and sensory nerve-endings. Evidence of this was adduced by A. S. DOGIEL in 1898, but the function served by the afferent supply is still somewhat problematical. The efferent terminals are doubtless sympathetic in origin, and it is clear from the work of J. N. LANGLEY that the sympathetic effector neurons (the grey rami) run in the ordinary mixed nerves to the limb. LANGLEY isolated and divided the lumbar sympathetic in cats and stimulated its central end, at the same time observing the colour of the pads of the feet. This experiment was repeated after division of the anterior crural and sciatic nerves, and it was found that the reflex paling which occurred when the crural and sciatic nerves were intact was completely abolished after they had been divided. Taken together with the well-known fact that dilatation of the arterioles and capillaries follows section of these nerves, LANGLEY'S observation shows that the vessels are under the control of sympathetic fibres which run in the ordinary mixed nerves; this control is tonic in nature and is potentially influenced reflexly by afferent impulses from the limb through the sympathetic. Experiment, therefore, seems to negative the suggestion that increased blood-flow to the limb following periarterial nerve section is due to the removal of tonic vasoconstrictor nervous impulses running through this network to the periphery. Should the periarterial network contain a functional preponderance of efferent depressor fibres or of efferent sympathetic vasodilator fibres in a state of tonic activity—a supposition for which there is no experimental justification—section of the network would be expected to give rise to peripheral vasoconstriction.

It is clear, therefore, that a tentative explanation of the clinical phenomenon observed may be more hopefully expected if we direct our attention to the possibility of the nervous network containing afferent fibres. If we may assume for the moment that it does—a possibility which was suggested by LANGLEY in 1923—it seems that the vascular dilatation should be interpreted as being due to the removal of afferent impulses having an excitor action on the local spinal vasoconstrictor centre, or an inhibitory action on the antagonistic vasodilator centre, or a combined action on both. The fibres concerned would thus be afferent pressor in nature. That such fibres exist in the lumbar sympathetic is shown by the experiments of LANGLEY already referred to, experiments which are analogous to those of SHERRINGTON, who found that a reflex rise in blood pressure in the spinal animal was produced by stimulation of the central end of the cut splanchnic nerve. Afferent pressor fibres certainly run in the ordinary mixed nerve-trunks along with depressor fibres, as can readily be shown experimentally by using different modes of stimulating the central ends of the divided nerve. As W. M. BAYLISS remarked, it may be that the depressor fibres in ordinary nerves are afferent fibres from arteries, and are analogous to those of the depressor nerve. He himself showed that section of the depressor in the rabbit is occasionally followed by a rise in blood pressure, and it is to be supposed that if the afferent depressor fibres from the limb vessels could be severed independently of the afferent and efferent pressor fibres, a local vasoconstriction would result. Conversely, section of the afferent pressor fibres would be calculated to produce a local reflex vascular dilatation.

On the hypothesis, therefore, that in the operation of periarterial neurectomy afferent pressor fibres are divided, the resultant effects receive a presumably adequate interpretation. The efferent path would probably be both through the sympathetic—assuming that the tonic impulses passing down it are inhibited—and through the antidromic nerves, whose centres are assumed to be stimulated. We should, therefore, obtain, on the one hand, arteriolar dilatational (sympathetic inhibition), and, on the other hand, dilatation of the capillaries and the small venules in the skin, the latter effect being brought about by the setting free of metabolites by the antidromic nerve-endings, as suggested by LANGLEY. It will be apparent that the interpretation given above of the clinical results contains an undesirably large proportion of hypothesis to fact, and it is equally clear that a complete histological and experimental investigation of the origin, course, and functions of the nerve-fibres found in the periarterial network is urgently required.

SOCIAL REVOLUTIONS AND THE PUBLIC HEALTH.

THE concern widely felt as to the declining birth-rate in this country, with the prospect of a corresponding decline in the actual population, seems to indicate that a rising population is accepted as a good thing in itself. It is true that an increasing body of sociologists are harking back to the doctrines of MALTHUS, and urging the restriction of births as one solution of our post-war problems. It is equally true that some of those who deplore the prospect of a stationary or falling population do so not because they consider the tendency disastrous in itself, but rather as an unfailing index of declining national prosperity and also because of its selective action. The question whether the growth of the population which accompanied the industrial revolution was due to an increase of the birth-rate or any other cause is therefore worthy of attention. We have become so accustomed to the abundant statistical data supplied by various Government departments, that the inquirer who turns his attention to the question of population for the first time is a little surprised to find that the available information on the subject up to the end of the eighteenth century is largely the result of guess-work. In spite, however, of considerable differences in the estimates of different authorities, there can be little doubt that the growth of population in England and Wales in the Middle Ages, although more or less continuous, was very slow. While the population nearly quadrupled itself in 100 years between 1801 and 1901, it took 700 years up to 1760 to accomplish little more than the same proportionate increase. The rate of growth was somewhat accelerated in the eighteenth century, towards the end of which those factors had come into play which accompanied the phenomenal expansion of the nineteenth century.

In tracing the growth of population in the eighteenth century we are largely dependent on such records as exist of the births and deaths which occurred. Curious discrepancies arise from differences of interpretation. Thus, Miss BUER in her recently published work [1] accepts as established an increase in the population of London during the period 1750 to 1801 from 676,000 to 900,000, which she attributes mainly to the falling death-rate. She quotes SHORT'S estimate of the death-rate of London in 1750 as 50 per 1000. According to FARR,[2] who accepted estimates by SIMPSON and PRICE for the earlier periods, the mortality during the non-epidemic periods 1728–37 and 1771–80 was 52 and 50 respectively, but fell to 29·2 in 1801–10. BROWNLEE,[3] on the other hand, confining his attention to the area of the Bills of Mortality of London, and judging by the number killed, the number dying over 60 years of age, and the numbers of abortions and stillbirths, considers that certain quoted estimates of the population showing little increase are justified. He calculates a series of death-rates rising to 37·8 per 1000 in 1721–30, and falling thereafter more or less steadily to 26·9 in 1791–1800. His estimate of the death-rates for periods closely corresponding to those for which FARR thought the rates were around 50 per 1000 are 36·2 and 29·5 respectively. Such rates are obviously of a different order, and it is hard to believe that the discrepancies can be due to the difference of area covered by the Bills of Mortality and London proper. Nevertheless, it appears to be agreed that the death-rate, probably stationary until the eighteenth century, did fall during its greater part, and there is no difference of opinion as to the remarkable decline of infant mortality which took place after the middle of that century. Taking into account a fairly stable number of births, as shown by the Bills of Mortality, the saving of lives, especially among infants, must have been followed by an increase of population which probably found living-room for itself outside the area of which these Bills are the records. There is good ground for believing that the same process was at work all over the country.

This rise of population and the falling death-rate to which Miss BUER attributes it form the text of an interesting survey in her book of the conditions of life in England and Wales in the early days of the industrial revolution from 1760 to 1815. The influence of new ideas in agriculture and market-gardening, new discoveries in industry, progress in medical knowledge and practice, the hospital and dispensary movement, improvement in sanitation and especially in water-supplies, the benefits of inoculation and vaccination are all shown to have raised barrier after barrier against disease at a time which has been impeached as the source of many of the evils that faced the Poor-law Commissioners in and around 1830. So far from being a period of deterioration, Miss BUER shows that the rise of industrialism and its attendant prosperity were mainly instrumental in bringing about an improvement in the health of the people and in their well-being. This is a useful contribution to our knowledge of a period, the circumstances of which have been somewhat overshadowed by the more striking episodes of the post-war times dating from 1815, when unemployment, industrial reorganisation, and cholera epidemics combined to create an impression of the influences of industrialism in harmony with its blatant ugliness. Cholera epidemics were probably no more the result of the rapid growth of towns and overcrowding, than influenza in 1918 was due to the Great War, or the Black Death to any new world movement, or the long waves of measles to circumstances over which human effort has any control. If cholera had come earlier it could scarcely have failed to spread under social and environmental conditions which were even worse than those of the industrial era. On the other hand, one direct result of industrialism and the growth of towns was an increase in the mortality from tuberculosis almost certainly due to the influx of "unsalted" rural dwellers, many from the Celtic fringe, into surroundings woefully suited for the transmission of infection. It is easy to postulate a somewhat similar explanation of the typhus epidemics. After all, the real industrial revolution of steam motive power and machinery had scarcely begun until 1815, and its evil results were not to be looked for till about that time.

There can be little doubt that post-war social distress, followed by rapid urban expansion and improvements of transport, created conditions favourable to the spread both of endemic communicable disease and also of accidentally introduced epidemic infections. A certain resemblance between present-day circumstances and those of 100 years ago—the trade slump following the vigorous industrial development of war-time, unemployment, a lavish Poor-law, fulmination of the comfortable against disgruntled and unaccommodating workers, increased employment of women in industry and commerce, and the radical reorganisation of industrial methods which appears to be impending—may reasonably awaken forebodings of evil so far as the health of the people in the near future is concerned. It is true that the last eight years have seen a rapid fall in the mortality from most forms of disease. There appear, however, to be signs that the decline of tuberculosis is slowing. When we remember, too, that the air-borne infections which we are least able to control, such as influenza, encephalitis, and poliomyelitis, have shown a tendency to fresh vitality in recent years, and that the prevalent overcrowding in dwelling-houses must be favourable to their spread, the possibility of a period of public health retrogression is not entirely remote among that section of the people whose standard of living is gradually being lowered.

[1] Health, Wealth, and Population in the Early Days of the Industrial Revolution. By M. C. Buer, B.Sc., Lecturer in Economics, University of Reading. London: George Routledge and Sons, Ltd., 1926, pp. 290, 10*s.* 6*d.*

[2] Vital Statistics (Memorial Volume), p. 304.

[3] The Health of London in the Eighteenth Century, Proc. Roy. Soc. of Med., September, 1925.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Thursday, Dec. 16th, at 5 P.M., Mr. Ernest Clarke will lecture on Emergencies in Ophthalmic Practice, at the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W. This lecture is free to members of the medical profession. A further series of lectures in Emergencies in Medicine and Surgery will be held from January to March, and there will also be a series of clinical demonstrations in ophthalmology and surgery. The Queen Charlotte's Hospital offers practical courses in obstetrics lasting from two to four weeks. Weekly courses in obstetrics and child welfare are undertaken by members of the staff of the City of London Maternity Hospital. The Fellowship can also arrange clinical assistantships at the Samaritan Hospital. The following special courses will be held in January: A fortnight's intensive course in medicine, surgery, and the specialties at the Prince of Wales's General Hospital from Jan. 10th to 22nd; a fortnight's all-day course in cardiology at the National Hospital for Diseases of the Heart, for which the entries are limited to twenty, from Jan. 17th to 29th; a fortnight's course in diseases of children at the Royal Free Hospital and the Children's Clinic, from Jan. 10th to 22nd; a month's course (Tuesday and Saturday mornings at 11 A.M.) in psychological medicine at the Bethlem Royal Hospital from Jan. 11th to Feb. 5th. Copies of all syllabuses of the special courses, of the general course programme, and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship, at 1, Wimpole-street, London, W.1.

Annotations.

"Ne quid nimis."

THE USE OF PHOTOGRAMS.

ONLY the most original minds can venture to publish the results of their investigations without having a care first to discover what has been already written on the matter to be investigated. For this purpose nothing can adequately take the place of personal search at a well-equipped reference library, but time and distance make this difficult in many cases, and the library of the Royal Society of Medicine has long offered special facilities to its members who live abroad or at a distance by supplying extracts of articles and bibliographies on specific subjects. There are obvious limitations to vicarious reference, and it is somewhat surprising that little use has been made in this country of the photostat which produces on demand copies of articles with their charts, tables, and illustrations in facsimile. The library of the College of Physicians in Philadelphia installed such a machine some 10 years ago to supply Fellows of the College with replicas of pages in books and of articles in journals at a cost in many cases less than that of postage of the original to and from the worker. Use was made of the Philadelphia photostat by applicants in all parts of the United States and even from Great Britain and Germany, and similar facilities have been provided in Washington and Stockholm. The library of the British Museum has recently installed an official photostat, of which readers make great use, finding a photostat copy cheaper than one made by hand. The minimum charge is 1*s.* each for a negative (white on black) 11 × 7 in., a positive (black on white) costing double. Apart from this everyday use the photostat can reproduce completely, and so render more accessible the rare volumes which no library is willing to circulate through the post. The reproduction may have an almost uncanny accuracy and throw off their guard any except the most wary reader. Where permanency is desired it is well to insist on the print being made on bromide paper. The Central Depôt for Scientific Information in Berlin (Unter den Linden 38, Berlin, N.W. 7) now announces that it is in a position to supply reproductions of original scientific literature in its own and other languages in the form of photograms. The price of these for teachers and students has been fixed for the present at 4 pf. per square decimeter—i.e., about 4 in. square—to cover the actual cost, the price for business purposes being 7 pf. Orders should give exact information in the following sequence: author, title, source of original text, kind of photogram desired, whether in the original size or reduced. The price to students appears to work out at the astonishingly low price of about ¾*d.* for a column the size of our own, but it is not specifically stated whether the price relates to the size of the photogram or the size of the article from which the reproduction is made. As this process has already proved really helpful to scientific students, it is to be hoped that its utility will soon be recognised by one or other of the medical libraries in this country, and that the price charged for copies may follow the Berlin example. The danger of the photostat lies in this—that for the sake of economy the purchaser or correspondent obtains a copy only of what appears to him to be the vital paragraph and may lose an equally vital context.

ACIDOSIS AND INSULIN.

POST-OPERATIVE acidosis has long presented an unsolved problem. Both the origin of the harmful acids and the extent to which they are injurious remain uncertain. There is also the problem of the ketone bodies and of those cases of post-anæsthetic toxæmia in which the alkalinity of the blood is diminished without there being any evidence of excessive acidity, or of the presence of acetone, diacetic acid, or ketone. All these conditions are often loosely referred to as acidosis, although it would be better to use the term only where there is actually excess of the acid bodies—not merely diminution of the blood bicarbonate. The two conditions in which these blood states are most prominent are post-anæsthetic toxæmia and the uncontrollable vomiting of pregnancy. The former has lately been investigated afresh by M. Labbé and M. Chevki,[1] and the latter by H. Seidl.[2] The French writers arrive at the conclusion that post-operative ketosis depends on a nutritional disturbance, caused by the anæsthetic, in which functional inefficiency of the liver plays a large part. This is, of course, in line with the theory usually accepted, although it leaves unexplained the occasional appearance of the symptoms after local anæsthesia, and, indeed, after shock independent of any anæsthetic. General interest in the treatment of acidosis has been aroused by the introduction of insulin. On the grounds that there is a pathological analogy between the metabolic defects which lead to acidosis in diabetes and those which cause it after operations or during pregnancy, it is argued that insulin should be used in the treatment of post-anæsthetic toxæmia and the hyperemesis of pregnancy. Seidl claims good results in seven cases of hyperemesis treated, and believes that insulin should be employed in all patients in whose urine ketone bodies are present. The French observers similarly recommend the use of insulin in the post-anæsthetic patients in whom there is not merely diminished alkalinity of the blood, but actual acetonæmia or ketones or extra acids in the urine. The use of insulin after operation has been much advocated in America, but, as we have pointed out,[3] the Toronto group in 1924 stated that "it is difficult to see what purpose it could serve," and cast doubt on the value of insulin "in conditions other than those in which there is a distinct deficiency of insulin metabolism." Insulin, they remarked, is a powerful drug, and should not be used recklessly. The question is to be brought before the Section of Anæsthetics of the Royal Society of Medicine during the current session.

HYDRATED MORPHINE DERIVATIVES.

So little is known of the intimate nature of drug action that it is almost always impossible to foretell at all accurately what will be the result of any chemical substance of known constitution coming into contact with a single isolated reactive tissue. And, of course, it is even harder to foretell the action of drugs on particular functions embodied in the coördinated complexity of the higher forms of life. Experiment, therefore, is the only means at our disposal by which to extend our knowledge of pharmacology and therapeutics, and one of the ways in which progress may be made is by the synthesis and study of derivatives of chemical substances which evoke a known biological response. The action of most drugs on man is by no means localised to the particular tissue whose function we may desire to stimulate or depress. If it were, the foreground of therapeutics would be much more easily penetrable than we find it. It may be hoped, however, that close coöperation between the organic chemist, the experimental physiologist, and the scientific clinician will give us chemical substances whose actions are more elective and which are thus of greater value in the treatment of disease. Advance along these lines must inevitably be slow, but a grain of sound experimental fact is worth infinitely more than a mass of hypothesis based on uncontrolled observation.

The hydrated derivatives of morphine deserve more intense study than they have received, and it is satisfactory to see an account of them contributed by Prof. Erich Leschke to an interesting volume which the firm of Messrs. Knoll and Co. has published to commemorate its fortieth anniversary. The derivatives chosen for investigation were Paracodin (dihydrocodeine), Paramorfan (dihydromorphine), Dicodid (dihydrocodeinon), Dilaudid (dihydromorphinon), and Eukodal (dihydrooxycodeinon). Dihydrocodeine is

[1] Presse Médicale, Oct. 2nd, 1926.
[2] Münch. Med. Woch., Sept. 3rd, 1926.
[3] THE LANCET, 1926, i., 987.

found to be much more active in depressing the coughing reflex than codeine, which, as is well known, is itself relatively more active in this respect than morphine. Dihydrocodeine is also more specifically analgesic than morphine, in that the higher centres of the brain do not show that general depression characteristic of the action of morphine, and its constipating action is much less marked. It may be given by the mouth or subcutaneously. The pharmacological action of dihydrocodeinon occupies a position between those of codeine and dihydrocodeine. Its toxicity is approximately the same as that of morphine, but increasing tolerance is not nearly so marked as with the latter drug, a fact which, according to Leschke, can be readily shown in animal experiments. Dihydrooxycodeinon is more nearly allied to morphine in its pharmacological effects in that its general narcotic properties are well marked; indeed, in this respect it is relatively more potent than morphine, and it has been used successfully in biliary and renal colic. Dihydromorphine has a similar action to that of morphine, but the effect lasts longer and the degree of tolerance developed to repeated injections is said to be decidedly less. Dihydromorphinon exerts its narcotic and respiratory depressant action in doses one quarter to one half that of morphine. Tolerance to the drug appears much less readily, its action on the gut is extremely small, and the danger of habituation is very much reduced. It is clear that if this information can be confirmed and extended by further experiment it must be recognised as a valuable contribution to pharmacology and therapeutics.

POISONS IN SHELL-FISH.

ARSENIC, as was shown in the notorious Manchester beer epidemic, has a way of cropping up in strange places. It has been found, for instance, in certain medicinal preparations of seaweed, notably Irish moss or carragheen, and now Mr. A. Chaston Chapman, F.R.S.,[1] has discovered quite a lot of it in some of the marine crustacea and shell-fish. For purposes of investigation Mr. Chapman estimated the arsenic as parts per million of arsenious oxide in the wet substance. In oysters from British beds this figure was in the region of 6, but in foreign oysters it was sometimes as high as 70 parts per million. In mussels the amount was even greater, sometimes reaching nearly 120 parts per million, a fact which may explain the poisonous symptoms which often follow the eating of mussels and are usually attributed to a poisonous alkaloid called mytilotoxin. The flesh of lobsters, both before and after boiling, yielded about 100 parts per million, but the highest quantity of arsenic, 174 parts, was found in some samples of prawns; this corresponds to over a grain of arsenious oxide per pound of wet edible flesh. Analysis of the sea-water in certain situations has led Mr. Chapman to conclude that "whatever may have been the original source of the arsenic, it is from the sea-water that the organisms dealt with in this communication have derived the arsenic they contain." It is obvious, however, that the arsenic can scarcely exist in any simple form in such quantities as that noted in the sample of prawns, for, if it did, toxic symptoms would be much commoner than they are. As a result of experiment it is thought that the arsenic compound present in the lobster, for example, is a more or less complex organic substance or mixture of substances soluble both in alcohol and in water. Examination of the urine of a person who has been eating shell-fish or crustacea has shown that the greater part of the arsenic is excreted in the urine soon after the food is taken. Nevertheless this would not necessarily prevent the occurrence of acute poisoning, and the problem arises how such quantities of arsenic are prevented, by chemical or physical combination, from exerting toxic effects. It is stated that this problem is being investigated. In the course of the analyses necessary for the determination of arsenic it came to light that in crustacea and mollusca there are also appreciable amounts of lead and copper. The latter is, of course, present in hæmocyanin, a blood-pigment of many invertebrates. It is also surprising to learn that formaldehyde has been found in certain kinds of fish, but Mr. A. R. Tankard and Mr. D. J. T. Bagnall [2] throw some doubt on the technique of this discovery, and at present formaldehyde cannot with any confidence be blamed for poisoning fish-eaters. If it is indeed the arsenic in oysters that is responsible for symptoms it is hard to see how untoward incidents can be prevented. Recent work in America[3] has gone to show that if oysters are contaminated with typhoid bacilli and returned to their natural waters they free themselves from infection in less than 16 days. This shows their excellent intentions, but it is scarcely likely that they could ever be trained to get rid of their arsenic as well.

[1] The Analyst, November, 1926, No. 508, li., 548.

THE THERAPEUTIC USE OF GOLD SALTS.

KRYSOLGAN and sanocrysin have in turn so completely occupied the field in the treatment of tuberculosis during the last few years that we are inclined to forget that the therapeutic use of gold salts is at least as old as Paracelsus. Almost every salt of the metal has been used and almost every disease treated with it. In a recent review Prof. Felix Klemperer and Dr. Alfred Salomon [4] have surveyed the whole field. The modern study dates from 1890, when Koch demonstrated that the growth of tubercle bacilli was inhibited by salts of this metal. Numerous investigators followed, most of them using the cyanides of gold, whilst Bettmann ingeniously tried combining them with tuberculin. Buch and Glück in 1911 introduced a combination of gold and cantharidin, and this was followed by an extensive series of experiments in Germany with the use of various gold cyanide and cantharidin preparations, some of which, such as aurocantan, have received special names. Then followed the work of Feldt with a combination of weak alkalis and complex organic salts of gold, resulting in the discovery of krysolgan and sanocrysin. The mechanism of action of these numerous gold preparations, from the early cyanide experiments to the most recent sanocrysin tests, is obviously far from being properly understood. One fact seems to stand out clearly: the action is not that of a direct destruction of the individual tubercle bacillus, but rather some action of the stored gold salt upon the tuberculous tissue liberating a product which for want of a better name has been called by many workers tuberculin. The use of this term is unfortunate, since there is no evidence that this substance is identical with the exotoxin or endotoxin of tuberculin. At best the assumption is an analogy. Those engaged in the treatment of cases will appreciate the pains which Klemperer and Salomon have been at to collect clinical records from various sources dealing with four of the most recent organic gold preparations—krysolgan, triphal, aurophos, and sanocrysin.

Amongst the numerous investigators who are now publishing their first results of the treatment of tuberculosis with sanocrysin Dr. Knud Secher [5] is entitled to speak with authority, since he was one of the early experimenters associated with Prof. Mollgaard. Dr. Secher remarks early in the book that although "complete sterilisation against tuberculosis" in man—in other words, the destruction of all living tubercle bacilli in an infected person—should presumably be possible, on the analogy of the animal experiments, yet such a result is not desirable. We are inclined to doubt whether such "sterilisation" (the word is hardly, perhaps, admissible to general usage in this sense) is even possible—at any rate by therapeutic treatment—in the majority of cases. But the writer's aim of "clinical restoration as nearly as possible" leaving the small remnants of infection to act as a focus of immunisation is an ideal not only

[2] Ibid., p. 565.

[3] Boston Medical and Surgical Journal, Oct. 28th, 1926, No. 18, cxcv., 884.

[4] Ergebnisse der gesamten Medizin, 1926, Band 8.

[5] Treatment of Tuberculosis with Sanocrysin and Serum. By Dr. Knud Secher, Physician in Chief to the Municipal Hospital, Bispebjerg, Copenhagen. London: William Heinemann (Medical Books). 1926. Pp. 256. 21s.

for those who use sanocrysin, but for all who treat tuberculosis. Dr. Secher follows the classification of tuberculosis into the anatomical forms of exudative, degenerative or necrotic, and productive or proliferative, which has now passed into common use on the continent, admitting that in practice it rarely gives a true picture of the clinical condition. The choice of case for sanocrysin treatment is probably best made on purely clinical grounds of history, signs, and symptoms, with a good radiogram as a backing, and without reference to a supposed pathological picture which may or may not exist. To the actual administration of the drug Dr. Secher finds three useful guides—temperature reaction (four types are recognised), erythema, and albuminuria, and he devotes a chapter to an analysis of all the untoward symptoms met with by various investigators. He agrees that it is not always easy to differentiate between toxic symptoms due to the gold-ion and those due to the liberation of tubercle endotoxin. Possibly the former may be more easily detected now that minute quantities of gold can be estimated in the urine and fæces by colorimetric, electrolytic, or iodometric titration. Although most English workers appear to have discontinued its use, Dr. Secher is a firm believer in the value of antiserum combined with sanocrysin, as originally advocated by Mollgaard. The interest in tuberculosis antiserum revived by sanocrysin investigation may itself lead to useful results. Dr. Secher adheres also to the large-dose method of administration, never using less than 0·5 g. as a start, and aiming at a high concentration of sanocrysin, being guided subsequently by the patients' reactions. Sanocrysin is a powerful drug, and cannot be used without facilities for careful observation of patients at rest in bed and without expert nursing. There is no question of ambulant treatment as in the case of tuberculin. All the necessary precautions have been taken by Dr. Secher, and his records, given in full detail in the book, are a monument of painstaking research. Of the ultimate results he is evidently convinced, for writing of pulmonary tuberculosis he says: "Sanocrysin treatment (when employed in accordance with right indications and carried through with sufficient energy) will in all patients cause an improvement of their condition and will cure a large number. . . ." Dr. Secher has had an extensive experience of sanocrysin and writes with conviction, but his readers may be more reserved in their conclusions.

SPIDER BITES.

IT is well established that some tropical spiders are big enough and poisonous enough to catch and kill animals as large as small birds. But modern observation has wiped out the tarantula myth, nor are there now found in Gascony "spiders of that virulency that, if a man tread upon them, to crush them, their poison will pass through the very soles of his shoes" as was once affirmed, Indeed, the pendulum has swung so far the other way that arachnologists have come to doubt whether spiders' bites ever cause illness in man. However, Dr. Emil Bogen, of Los Angeles,[1] has seen 15 cases in recent years where a characteristic chain of symptoms has followed the bite of *Latrodectus mactans*, a big black spider which has an unfortunate habit of lurking under the seats of privies. The chief symptom is pain, which may occur in any or every part of the body, irrespective of the site of the bite, and is accompanied with restlessness, nausea, dizziness, and other general signs. It is obvious from his description that the patient's complaints might easily be put down to fright if only an odd case was seen; they are, however, repeated with considerable regularity in all the examples which have come to the Los Angeles General Hospital. The pain is often very severe, and requires large doses of opiates to control it. Dr. Bogen has had good results by injecting the serum of convalescent cases. After a few days the patient recovers without any ill-effects. The bibliography is, unfortunately, not printed in the *Archives* "on account of lack of space," so that it is difficult for anyone who is interested to follow the matter up; but in his summary of the literature Dr. Bogen points out that similar poisonings, often from other species of *Latrodectus*, have been repeatedly described in Southern Europe, Russia, Australia, New Zealand, Madagascar, and South America, and there is evidently no reason to doubt that human arachnidism is a reality.

[1] Jour. Amer. Med. Assoc., 1926, lxxxvi., 1894; Archiv. Int. Med., 1926, xxxviii., 623.

ROYAL MEDICAL BENEVOLENT FUND: THE CHRISTMAS GIFTS.

IT has been the practice of the Royal Medical Benevolent Fund for many years to present to the annuitants and some of the most necessitous grantees a Christmas gift. The Treasurer now makes an appeal for £370 to keep up this practice. The committee has not in hand any special fund to draw upon to meet this Christmas gift. The individual sum given, 25*s*., is small, but the recipients are many; in former years they have received this little augmentation of their narrow means and are no doubt looking forward to its receipt this year. It is a friendly act on the part of the managers of the Fund which should not be allowed to cease, and we trust that our readers will make the continuance possible by finding the small sum necessary. Subscriptions may be sent to the Hon. Treasurer, Sir Charters Symonds, at the Offices of the Fund, 11, Chandos-street, Cavendish-square, London, W. 1.

MEDICAL SUPPLIES IN WAR.

THE military authorities of the United States of America are clearly determined not to be caught napping by another war. All officers of the Medical Reserve are told precisely what will be their appointments on mobilisation, whether to hospitals, field ambulances, or as specialists. The question of medical supplies and their replacement is being carefully considered, and so far as surgical instruments are concerned, is discussed by Major R. C. Heflebower, Medical Corps, U.S. Army, in an address to the American Surgical Trade, reported in the *Military Surgeon* for November. The arrangements for providing instruments in war-time are in the hands of a special section of the Surgeon-General's Office, a section which has nothing to do with the present supply. First the section has to decide what instruments will be wanted, and what specifications shall be put forward; it is advised by certain Reserve officers, who are surgical instrument-makers, so that buying shall be done commercially in the best way. Then the quantity of stores wanted must be defined. Ultimately that will be settled by the scale of mobilisation, but at present tentative contracts are put out, and the tenders are advised upon by the Reserve officers, who discuss whether they can be better assigned — whether, for instance, similar contracts for forceps should be given to each contractor, or whether all large forceps should be made by one and all small forceps by another. The third question is, whence shall the instruments be obtained? At first some can be purchased; this will be the work of the Reserve officers, who (having regard to the needs of the civil population) will buy what is immediately available. The rest must be made. The industry, however, may not itself be able to cope with the demand, and it may be necessary to call on workers in associated trades. Thus surgical needles or scissors might be roughed out by other workers and finished by the surgical instrument-makers provided that there were enough skilled mechanics. So as to avoid a shortage the trades can get a lien on the services of mechanics engaged elsewhere, and these men will be scheduled as indispensable. Moreover, the raw material, power, and transport required for this work must all be arranged for in advance by the Assistant-Secretary for War, in the light of the needs of other essential services. It is hoped that working along these lines there will be little industrial confusion in the change from peace

to war, and that the Army will never be held up for expected supplies. The section has also in mind the danger of accumulating a large surplus of stores which, if thrown on the market, must disorganise industry in the difficult post-war days. Such foresight is astonishing.

A VACCINATION INQUIRY.

IN an address delivered before the Berne Medical Club, Dr. A. Hauswirth,[1] the medical officer of health for that city, reports that a committee consisting of two medical men, including himself as chairman, and three laymen, one of whom was an antivaccinationist and the other two opponents of all compulsory measures though alive to the advantages of vaccination, was appointed by the Berne City Council to inquire into the supposed evil effects of vaccination among approximately 40,000 persons who had been compulsorily vaccinated between the spring of 1922 and the autumn of 1924 on the occasion of a small-pox epidemic. Only 14 cases in all were reported to the committee which after a careful investigation found that there were only four cases in which a possibility or probability of a connexion between the disease and the previous vaccination could not be excluded. The first case was that of encephalitis lethargica in a youth aged 17, who developed the symptoms shortly after vaccination, and made an almost complete recovery. The second case was one of fatal septicæmia following measles which occurred in a girl aged 9 years, vaccinated on the third or fourth day of the incubation period. In the third case a girl aged 14, six days after vaccination, developed follicular tonsillitis, followed by fatal septicæmia. The fourth case was that of a boy aged 13, who was vaccinated six days after recovery from an acute gastro-intestinal attack, accompanied by circulatory disturbance. About a week later symptoms of acute septicæmia developed, and death took place. The three deaths, therefore, were due to septic processes, in which the onset of the disease probably coincided with the performance of vaccination. The lesson to be learnt from these cases is that on the slightest suspicion of an acute infective or other acute disease vaccination should not be performed. In conclusion, Dr. Hauswirth remarks that as in only 0·01 per cent., or in 1 out of 10,000 vaccinations, could any evil effect be attributed to the process, the occurrence of such cases is far outweighed by the enormous benefit conferred by the absolute protection against small-pox provided by vaccination.

SAPONIFIED TOXIN IN SCARLET FEVER.

Prof. W. P. Larson, of Minnesota University, attended a meeting of health officers of the State of Ohio in the middle of last month, and gave an account of his method of detoxicating toxin and the results which he has had in producing active immunity against scarlet fever and diphtheria. Two years ago he was investigating the cause of pellicle formation in bacterial cultures, and to test his theory that surface tension rather than the presence of oxygen is the determining factor in this phenomenon, he introduced soap solutions into the culture media. Finding the appropriate concentration of soap, he was able to make all pellicle-forming organisms grow either in the liquid medium or at the bottom of the flask. The critical surface tension above which pellicle formation will always occur he found to be 42 dynes. Non-pellicle formers can be made to form pellicles if they will grow on a glycerine medium, and convert the glycerine into fatty bodies. Incidentally he observed that the tubercle bacillus loses its pathogenicity when grown on low-tension media instead of as a pellicle, and he claims that by using a medium containing soap he can produce in a few days cultures similar to the B.C.G. cultures which Calmette obtains by growing tubercle bacilli in bile medium for 13 years. The soap found most suitable as regards viscosity is a highly purified castor oil soap. These experiments led Prof. Larson to investigate the possibility of obtaining non-pathogenic strains of other bacilli. He was able to give detoxicated pneumococci to rabbits in doses which would have been certainly lethal without the admixture of soap, and he even succeeded in immunising guinea-pigs to tetanus, at the same time bringing evidence to support Ehrlich's theory that the more sensitive an animal is to a given toxin the greater will be its antibody formation in response to that toxin. All bacterial toxins, he found, can be detoxicated by this method without losing their immunising property, the only exception being that produced by *B. botulinus*. The first human volunteers were treated with a 1/10 L. + dose of diphtheria toxin in 1 per cent. castor oil soap, but it was found that the same dose in 2 per cent. soap gave less reaction. The latter mixture was used on 800 medical students, and over 60 per cent. of Schick-positive reactors became Schick-negative within 10 days. Applying the same principle to scarlet fever toxin (Dick), he found that a 3000 skin-test dose could be covered with 2 per cent. soap. This solution causes some reactions in adults, for whom a 3 per cent. soap solution is found to be more satisfactory. This dose immunises 90 per cent. of positive reactors within three weeks, and has been used as a prophylactic in various institutional outbreaks, apparently with success. As a method of prophylaxis it has none of the unpleasant concomitants of passive immunisation with Dochez serum. More recently a combined scarlet fever and diphtheria saponified (3 per cent.) toxin has been used; this is said to cause less reaction than the separate use of two saponified toxins. It should be added that Prof. Larson has been able to recover the toxin from his solutions by adding a simple salt solution, and has thus satisfied himself that there is no truth in the suggestion that the toxin is destroyed by soap. At present he recommends that two doses of the combined toxins be given at an interval of two to four weeks. Five thousand school-children in Minneapolis were given the first dose recently, and there was only one complaint—of a sore arm. The discussion which followed Prof. Larson's address was led by Dr. Roger G. Perkins, professor of hygiene at Western Reserve University, who described the successful use of Prof. Larson's toxin in Cleveland, and uttered a warning against allowing the public to believe that biological methods would ever be successful in 100 per cent. of cases. Dr. Peters described successful arrest of epidemics of scarlet fever in Cincinnati by the use of the same toxin, and other speakers also gave personal testimony to its efficacy in practice. In answer to inquiries about the possibility of obtaining the toxin, Prof. Larson said that he had sent out over 50,000 doses of scarlet fever toxin, and that the present demand was beyond the means of a teaching institution. He has therefore instructed one of the large commercial houses in his technique, and his material will soon be on the market.

[1] Schweizerische medizinische Wochenschrift, Nov. 20th, 1926.

THE MEDICAL USES OF RADIUM.

THE stock of radium salt entrusted by H.M. Government to the Medical Research Council is being used at 11 centres, distributed through the country, for the treatment of disease. Every year these centres furnish a report of their activities to the Radiology Committee, appointed jointly by the Council and the British Empire Cancer Campaign, which body has added to the stock of available radium, and on this committee falls the difficult duty of collating the reports—diverse as to manner as well as matter—into a readable account of progress made. This year, in No. 112 of the special report series,[1] which contains reports on cancer of the breast, uterus, mouth, nasopharynx and larynx, œsophagus, rectum, bladder, and prostate, no reference is made to the treatment of rodent ulcer or to non-malignant conditions. The reason given for these omissions is that suitable radiological treatment for the former

[1] H.M. Stationery Office, 1926, pp. 34, 1*s.* 6*d.*

and for many non-malignant diseases is now well known. The technique adopted by common consent at the centres in the treatment of menorrhagia is also considered to have reached a stage which carries it beyond urgent need of further research. The benefit conferred by radium on those suffering from the leukæmias is now known to be short-lived, the blood picture soon becoming abnormal again. The section of this report which is of most interest is that on cancer of the cervix, since a brief account of the technique used at each of the centres is supplied, and an analysis has been made of statistical data, collected from four of the centres, of patients treated since 1922. Of 214 cases, with few exceptions inoperable, 120 are dead and 36 have not been traced. At a period not less than a year after treatment 31 were alive but not free of disease, while 27 were apparently well. Of 20 borderline or operable cases the corresponding numbers were 4, 4, 6, and 6. From the accounts of technique it is obvious that there is still a considerable degree of variation in the dosage of radium used and in the manner of its application. The introduction of 50–100 mg. into the cervical canal for 22 to 24 hours is a measure common to all except St. Bartholomew's Hospital, where a study of the effects of much smaller quantities acting continuously for six days is being made. Growths which cannot adequately be reached by radium tubes in the cervical canal are treated in some centres by packing applicators round the tissues involved, while others insert needles into the growth, care being taken to avoid proximity to rectum or bladder. In spite of these differences there seems to be more hope of soon establishing a standard technique in cancer of the cervix than in most other regions. Once this has been agreed on, it will be less difficult to ascertain the scope of radiotherapy, and especially to decide whether it should be advocated as a substitute for excision of the growth in operable cases or only as an ancillary measure to prevent recurrence.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CCI.—THE TREATMENT OF CHILBLAIN (ERYTHEMA PERNIO).*

II.—THE MANAGEMENT OF THE CASE.

FROM what was said in the preliminary considerations of the ætiology of chilblains and of those susceptible to them, it will be clear that their treatment must vary according to the type of patient with which one has to deal, and should, whenever possible, be preceded by a thorough physical examination. In particular it is necessary to search for any chronic infection which may be lowering the patient's resistance—for example, tuberculosis of lymphatic glands or other organs, persistent nasopharyngeal catarrh, nasal-sinus disease, septic tonsils, or oral sepsis. There are points about the general treatment of patients with a tendency to chilblains which are applicable to all cases. Unfortunately, however, among the majority these are seldom practicable for social and financial reasons.

Diet and Exercise.

With our modern knowledge of biochemistry and bacteriology—incomplete as it is—the rational rules of diet are so obvious as to be almost platitudinous. Briefly the indications in these patients are:

(1) To modify the diet according to the patient's mode of life; the more sedentary the latter the less should be the amount of carbohydrate taken.

(2) To ensure an adequate supply of fresh food containing mineral salts and vitamins; green vegetables and mixed salads, fruit, particularly apples, wholemeal or Swedish bread with plenty of butter, eggs, preferably raw, milk, cheese, cream, and a moderate quantity of freshly cooked meat and fish should form the basis of a normal diet. With regard to fruit, however, the decalcifying action of certain very acid fruits should be remembered.

(3) In patients with symptoms of excessive intestinal putrefaction the amount of meat and fish should, of course, be reduced to a minimum and the quantity of carbohydrate and fresh vegetables and fruit increased.

(4) Conversely in those with intestinal fermentation and excessive acid production, all soft starchy and concentrated sweet foods must be excluded. The great majority of these patients have been or are being wrongly fed, the common fault being an excess of carbohydrate and a lack of fresh dairy produce and uncooked vegetables and fruit.

It is clear that physical exercise, preferably out of doors, provides the best method of improving a sluggish peripheral circulation, but, of course, the amount taken must be regulated by the patient's physique, and the presence or absence of a chronic infection—tuberculous or otherwise—must be taken into account. Jacquet's biokinetic method of treating chilblains, if conscientiously carried out, is of value. The patient fixes the finger- or toe-joints by forcible muscular effort, and holds them extended in an elevated position for five minutes several times daily.

Sunlight.

Except in rare cases chilblains disappear spontaneously in summer, and are much less common in a cold dry atmosphere than in damp chilly weather. Apart from this, heliotherapy and, to a less extent, artificial light baths are of great value in the treatment of patients with acrocyanosis. I have, however, seen a patient with lupus erythematosus develop chilblains while under intensive treatment with carbon-arc light baths.

The beneficial action of ultra-violet light in these cases is probably complex. It undoubtedly affects the vasomotor system as well as other parts of the sympathetic nervous system—viz., that controlling the pigmentation of the skin, the fibres supplying the hair-bulbs, and those responsible for muscle-tone. Many patients state that after a course of heliotherapy or light baths they "feel the cold" far less. Apart from increasing vasomotor tone ultra-violet radiations act on the endocrine glands, particularly on the thyroid and parathyroids, but also on the ovaries and testes. As regards chilblains it is probable that the action of ultra-violet light on the sympathetic and certain of the endocrine glands is chiefly responsible for its beneficial effect, but its power of raising the calcium concentration in the blood may in some cases be an important factor, and in this connexion it is of interest that the experiments of Grant and Gates of the Rockefeller Institute (quoted by Howard Humphris [1]), appear to show that the parathyroids are more profoundly affected by ultra-violet radiation than the other endocrine glands.

Clothing.

Too little importance is unfortunately attached to the question of clothing by the medical profession, and it is a sad reflection that the emancipation of women from the unhygienic frills and furbelows of the Victorian age lies to the credit of the modern costumier and not to ours. It is high time that our more conservative tailors and hosiers condemned the Eton suit, the heavy tweeds, and winter underclothing to oblivion. Fortunately the system of compulsory games that obtains at preparatory and public schools ensures that boys wear a rational costume for, at any rate, part of their daily life. Needless to say, a patient subject to chilblains should be advised to keep the extremities warm with loose woollen gloves and stockings, but the rest of the clothing should be light and porous, and whenever possible vigorous out-

* An article on the Treatment of Chilblains—I. General Considerations—appeared in this series last week.

[1] Artificial Sunlight and its Therapeutic Uses, Oxford Med. Pub., 3rd edit., p. 71.

door exercise with the minimum of covering should be enjoined, so that the tonic effect of air and sunlight on the skin may be obtained.

Drugs.

The administration of drugs internally for the relief of the chilblain tendency is of far less importance than the prophylactic measures as regards diet, exercise, and sunlight, outlined above. At the same time their temporary use may be of the greatest value in order to correct any abnormal state that may exist in the individual patient under treatment. In the fat type I have found, as a rule, that thyroid gland, which should be pushed until the optimum dose is found, and iodine in large doses, bring about striking improvement if persisted with. The latter may be given as the French tincture (French Codex, 1908) dispensed in a drop-bottle and taken in milk, beginning with 5 drops twice daily and increasing up to as much as 60 drops in divided doses per diem. Symptoms of intolerance must be watched for, and when, as often happens, the patient develops a repugnance for the drug, it should be discontinued for a while. Iodicin, a calcium salt of iodo-ricinoleic acid, or some similar organic combination of iodine may be used as an alternative to the tincture. Colonic stasis is the rule in these patients and should be corrected by the temporary administration of saline or other aperients and liquid paraffin. If there is colonic spasm, belladonna is of course indicated.

It is as a rule in the thin, nervous, *chétif* patient that calcium salts are most likely to be of benefit, but their effect may well be tried in all cases. They are no doubt best given by injection, but for convenience's sake are usually taken orally. Afenil—a calcium chloride-urea compound—is much used on the Continent; it is supplied in 10 c.cm. ampoules for intravenous injection, and a course of from six to eight injections at intervals of a few days is advised. For intramuscular injection a solution of calcium chloride, or Crookes Collosol calcium may be employed. Orally calcium lactate in doses of 15–20 gr. thrice daily, preferably about an hour before meals, or the proprietary compound of calcium and sodium lactate known as kalzana are convenient and pleasant to take. There is still considerable scepticism as to the activity of parathyroid gland when given by the mouth, but evidence from independent sources has now accumulated to show that reliable preparations are on the market and that their oral administration does increase the concentration of ionisable calcium in the blood. Cod-liver oil is of unquestionable benefit, particularly in thin patients with a low resistance to infection. Brocq advises a combination of thyroid with pills containing quinine hydrochloride, ergot, and digitalis leaves.

Local Measures.

Local measures for the relief of chilblains are clearly of secondary importance, and it is unnecessary to enumerate the various applications that have been advised. Apart from the biokinetic method of Jacquet already referred to, probably the most efficacious local treatment is by means of galvanic reversals. The patient's hands and forearms are immersed in baths of warm water, through which is passed a galvanic current, the latter being periodically reversed by means of a converted metronome. A course of daily treatments of from 10 to 20 minutes is given over a period of two or three weeks at the beginning of the winter. Another method that often gives remarkable relief is the immersion of the affected parts in hydrogen peroxide 15 vols., diluted with an equal quantity of hot water, for ten minutes, followed by vigorous friction with a rubefacient such as methyl salicylate ointment or spirits of camphor. Ointments containing ichthyol, iodine (e.g., iodex), balsam of Peru or storax are also efficient. In severe cases by far the best preliminary treatment is to put the patient completely at rest in bed, mild antiseptic applications being made to any ulcerated surfaces.

H. W. BARBER, M.B. Camb., F.R.C.P. Lond.,
Physician in Charge of the Skin Dept., Guy's Hospital.

Special Articles.

EPSOM COLLEGE.

AN APPEAL TO PRACTITIONERS.

I ASK every medical practitioner to be so patriotic to his profession as at least to read this letter. Epsom College needs a new sanatorium and isolation block. The existing one is out of date in its accommodation and arrangements, is uneconomical in its working, and affords no facility for the isolation of infectious cases. This purpose, of such paramount importance in a public school, is at present effected by a wooden hut, which is licensed only for a few years more. The vacated sanatorium would, however, with a limited amount of internal adaptation provide excellent residential quarters for at least 40 more boys, and so enable the Council to house some of the numerous applicants whom they have to refuse annually.

Epsom College, as the offspring of the medical profession, should show a sanatorium that would be a model for all other schools to copy. Such an object should appeal to the pride as well as to the philanthropy of the profession, and some £25,000 is a sum that would enable us to gratify both. We cannot hope for many large donations from a profession in which few are rich, but no other profession has more ready access to rich laymen, who may desire to bestow some of their wealth on suitable objects of charity. Here is an object that combines an educational with a philanthropic purpose.

There are over 50,000 practitioners on the Medical Register. Ten shillings from each would provide this haven of rest for the reception of sick sons of generations of medical men, and perhaps for your own. But as experience has taught us that such a unanimous response is not to be looked for in our or indeed in any profession, we ask those who can to send larger donations to compensate for those who send nothing. Annual subscriptions do not even afford the balance required for maintenance, so that for all structural improvements we have to depend on legacies and extraordinary donations. Remember *qui facit per alium facit per se*, and great gratitude will be due to those who can supplement their own gifts by influencing donations from others.

The donor of £10,000 may give his own name, or the name of any person whom he or she desires to commemorate, to the main block of the sanatorium, and the donor of £5000 may do likewise to the isolation block. A large ward may be named for £3000, and a small ward or the casualty department for £1000, while £100 may determine the name of a single bed. Each medical school might well confer its name on a single bed.

This complete scheme should not be beyond the ready accomplishment of the profession with the help of some of those not rare persons who feel that they owe a debt of gratitude to some honoured medical attendant. We can do it, if we have the will to do it, but this condition is an essential prerequisite.

The *British Medical Journal* and THE LANCET of their goodness have promised to publish lists of all subscribers, both small and great, from time to time. I beg you to figure on these lists by sending what you can to the "Sanatorium Fund" to the Secretary at the Epsom College Office, 49, Bedford-square, W.C.1, or to the office of either of the above-named journals to the credit of the Fund.

RAYMOND CRAWFURD,
Chairman of the Council of Epsom College.

November, 1926.

PROBLEMS OF MENTAL DEFICIENCY.

CONFERENCE OF THE CENTRAL ASSOCIATION FOR MENTAL WELFARE, DEC. 2ND-3RD, 1926.

AT the morning session on Dec. 2nd the chair was taken by Sir LESLIE SCOTT, K.C., the President. We were just beginning, he said, to realise that there would always remain a number of defectives who would never enter institutions or who would only spend a few years in them. What was hoped for was effective control of those who were antisocial and unbalanced, leaving for community care those who in the right environment could live a fairly happy and useful life. The community benefited directly by having trained, controlled defectives living in it. He urged the practical development of the handicraft centres, and pointed out that development depended on the right people being in charge. The borderland case was an even more difficult problem; mental defectives formed but a small percentage of that great army of failures of civilisation for whom it was our duty to provide just that additional help which would enable them to help the world. Unlike the defectives, the borderland cases might in the end be made useful and helpful members of society, if proper treatment were begun early and continued steadfastly. Expenditure on this aim would be a real form of national economy.

Miss RUTH DARWIN (Board of Control) then opened a discussion on the

Proper Care of Defectives Outside Institutions.

She pointed out that the number of defectives in our present population based on the estimate of the Royal Commission was 174,000, and that about half of them were in urgent need of care. The total number under supervision of some kind was 53,664, of which 20,297 were in institutions and homes. It was clearly impossible, even if desirable, to segregate the whole defective population. The care required for those who must remain outside institutions was partly in the interest of the individual and partly in that of the community. The speaker had no doubt that most defectives were happier under care; the small group who chafed against control and enjoyed brief pleasures in liberty usually consisted of those whose antisocial and vicious tendencies made them so unfit to manage their own lives that their liberty was sooner or later taken from them by the criminal law. Whether the right of the community to safeguard itself at the expense of the individual should be extended to the enforced segregation of defectives to prevent the procreation of children was a question of fundamental importance which had never been fairly faced. Quite apart from heredity, the chance of the children of defective parents of becoming independent, self-supporting citizens was small. Several statistical inquiries had made it certain that the less skilled sections of the nation were multiplying more quickly than the skilled, and that the full effects on the race were only now beginning to be felt. It seemed a reasonable assumption that a large proportion of the borderland cases of mental defect were to be found in this rapidly reproducing stratum of society, which was therefore a very grave matter. The most immediate and obvious measure to prevent a deterioration in the quality of the race, due to the elimination of natural selection from modern life, was to prevent procreation by persons whose mental defect made them unfit to become parents. There could not be two opinions as to the desirability of relieving future generations as far as possible from the burden of maintaining a group of persons incapable of leading a full life or making any return to society.

Provisions under the Mental Deficiency Act.

The number of mental defectives now ascertained amounted to 55,480, and it seemed justifiable to conclude that in certain areas the existence of large numbers was still unknown to the responsible authority. The non-institutional methods contemplated by the Act were doomed to failure unless their limitations were recognised. Careful discrimination was needed as to the type of case for whom such care would afford sufficient protection. The only safe and humane treatment for defectives with antisocial and immoral tendencies was institutional care. Even the steady-going harmless individual was a danger to himself and others unless favourable surroundings could be ensured. Regular visitation and reports were necessary and must be provided by visitors experienced enough to recognise early symptoms of trouble. Occupation centres provided a most satisfactory means of keeping in close touch with defectives living under guardianship. Lack of recognition of these principles and shortcomings in the working of the Act had resulted in the marriage of 195 adults, the adoption of immoral relations or perverted sexual habits by 252 more, and the birth of 275 children. These figures were serious, and it must be remembered that they related only to cases under statutory supervision. As long as the shortage of accommodation continued, defectives unfitted for free life must be left in the community. Another difficulty was that the officers in some areas were primarily appointed in another capacity and had not sufficient time for this work.

The Marriage of Defectives.

A third difficulty was that there is nothing in the law to make the marriage of a defective illegal or invalid. The speaker suggested that marriage and procreation might be limited under the present Act in the following ways. Full use should be made of the powers under Section II. (2) of the Act, and all cases notified should be provided with a home in a colony or carefully-considered guardianship. Better and more constant supervision by trained visitors should be sought, and lack of parental control leading to sexual irregularities should be regarded as "neglect" bringing the individual under care. Where there was risk of marriage, every effort should be made to get the parents to consent to institutional care.

Sterilisation.

Sterilisation, as a measure supplementary to the Act, deserved the fullest consideration. Cases would have to be selected with a view to each individual's mentality and temperament and the conditions to which he would return, and the consent of the parent or guardian would be necessary. If the danger of procreation were eliminated, a larger number of cases might safely be recommended for release from institutions. There should be great elasticity in the treatment of defectives. The only panacea for mental deficiency lay in a higher standard of human conduct and ideals; in the meantime there was urgent need for the provision of new colonies; better ascertainment, supervision, and training; investigation and experiment into new methods for fuller training of workers; more careful selection of guardians, and coöperation amongst all engaged in practical or scientific work connected with mental welfare.

Dr. A. F. TREDGOLD said that the policy of sterilisation was absolutely wrong in theory; the number of defectives who were the offspring of people who might have been sterilised was infinitesimal. The whole of the available evidence indicated that mental defect was not inherited according to Mendelian law. In practice sterilisation would probably lead to increased sexual irregularity, which meant increased venereal disease. To draw the line would be exceedingly difficult, and the measure would undoubtedly be used as a pretext for delaying the necessary increase in institutional accommodation and for releasing cases who ought to be in homes. The matter had been most carefully considered by people with absolutely open minds, and this was the conclusion to which they had come.

Mrs. HUME PINSENT (Board of Control) said that there could be no two opinions as to the importance of preventing the procreation of mental defectives;

the condition of their children was enough to make the most cynical ashamed of our civilisation; they were the despair of all social workers, since the mother was the irreformable source of all their suffering, disease, and crime. Making marriage void would not prevent the birth of children, and no amount of supervision outside institutions could prevent it either. The subject of sterilisation with consent was one on which much further thought should be expended; it might free some who would otherwise remain all their lives in institutions, and would be a valuable social experiment.

Special Schools.

Any curtailment of expenditure on education meant knocking the bottom out of the Mental Deficiency Act. Notification was the recognised means of linking up the educational and mental health services and the only means of securing proper care for defectives, but it was not properly carried out, as literally hundreds were never ascertained and left school at 14. The local authorities could not deal with them until they were 16, and in this gap many were lost sight of and never heard of again until they appeared in prisons or Poor-law institutions. By that time irrecoverable opportunities had been lost, and there was nothing for them but segregation.

Mr. J. SANDEMAN ALLEN (Chairman, West Lancashire Association for Mental Welfare), in a paper taken as read, said that the Act of 1913 placed upon the local authorities the responsibility of safeguarding the community and the defective by an extension of the existing institutional care and by the introduction of the entirely new method of continuous and lifelong supervision. Only a very few children were so developed by a special school training as to be fit to join normal children; for the majority their costly education was wasted unless they stayed at the school until 16 years of age and received care and supervision throughout and for the following few years. Leaving them to the care of their parents or of an after-care committee was not satisfactory. The responsibility of recommending mental defectives for occupation called for continuous and increasing study.

Meaning and Effectiveness of Supervision.

No definition of supervision was given in the Act, and it was left to the interpretation and imagination of local authorities. The greatest problem to be faced by any voluntary association was how to make supervision in any degree effective. It must take into account the family environment and standard, the degree of defect, and the age of the defective. For a young and deeply defective child in a poor home the aim should be to encourage the mother to train the child in regular habits, decency, and cleanliness, to secure medical treatment for minor ailments and some holiday where possible. For an excluded imbecile, training in a centre should be added to the desiderata. Cases notified for supervision on leaving school, and adults, should be urged to continue some form of manual work in an employment centre, advised as to suitable recreation, and their occupations, if any, investigated as to suitability. The most difficult cases were often those on licence from an institution with a view to discharge. In a careless home they did not get a fair chance. Hostels, as a kind of half-way house between the institution and freedom, and for the ex-special child with an unsuitable home, would be an expenditure that would very soon show itself as an economy. A most valuable aspect of the work of a voluntary association was coöperation with other such bodies. Nevertheless, the hold must be a very loose one, and sometimes totally inadequate, and the defective could only be allowed to go on until he got in trouble with the police or the parental neglect became gross enough for action by the local authority. Occupation centres had been accepted almost universally as an adjunct to supervision, but the older patients could not be retained indefinitely as the younger ones came in. The West Lancashire Association hoped to open a combined club and handwork class for older defectives.

Borderland Cases.

The most difficult to deal with and possibly the most dangerous of all cases was the hydra-headed class known as "borderland," which ran the whole gamut of social welfare effort and exhausted everyone's patience and resources before being recognised as uncertifiable mental disorder. In their ranks were the potential criminal and prostitute, the incurably vagrant, the young hysteric, the potential suicide and murderer, the neurotic invalid, the emotionally unstable, victims of their temperament and the prey of the unscrupulous. Another similar class was the subnormal criminal who might, perhaps, be sufficiently supervised to prevent a life of crime, but so far no one seemed to have solved the problem. Colony life, at present impracticable, seemed to offer the only hope.

Procreation.

It was a strange anomaly that, while it was illegal for a defective under certificate to marry if in an institution or under guardianship, he became free to do so if discharged. In mental deficiency there was no "cure," and discharge only meant sufficient improvement to warrant the hope of earning a living or some change in the home conditions. It should be made illegal for certifiable defectives to marry. Sterilisation would probably increase the evils of promiscuity and prostitution and still leave the problem of the normal person who is a "carrier" of mental defect.

Dr. RALPH CROWLEY (Board of Education) said that one-fifth of the children in the special schools had an intelligence quotient of over 70 and another one-fifth below 50; roughly one-third of them required custodial care. An inquiry into the after-history of a number of boys showed that one-seventh of them only could be described as unemployable, and that two-thirds were in regular work. They were less restless than normal children, and willing to go on doing donkey-work. It was not true that the special schools were full of children who would be a danger to the State. He pointed out that present methods gave a series of "transverse sections" of the lives of these people, and appealed for long-continued watching, which would give a reliable "longitudinal section."

Dr. H. BURPITT (Newport) pointed out that the appointment of a special officer for mental deficiency work was not always the best way of enlisting the sympathy of the parents, who were apt to get tired of a series of visitors.

Councillor Miss EMILY FORTEY (Leicester) said that parents were apt to evade special schools by sending their children to private establishments, and suggested that this might be stopped if certification under the Mental Deficiency Act could be dispensed with for special schools.

Mr. W. H. FLETCHER (London Teachers' Association) said it was most disquieting to learn that the number of children in special schools had steadily decreased during the last five years, since the numbers of defectives had certainly not decreased. He pleaded with doctors and head teachers not to be loth to send children forward so that they came under statutory examination. Many boys stayed in general schools until they were 13½, and then got certified, but by that time they could never receive the special groundwork and training they needed.

General Discussion.

Dr. R. HUGHES said that in Stoke-on-Trent the gap between 14 and 16 had been bridged by an unofficial notification from one medical officer to the other.

Mrs. EMMETT (Bradford) bewailed the inadequacy of supervision and the helplessness of workers who could only pay periodical visits. Any mental defective without training was likely to become helpless, dirty, and uncontrolled. Occupation centres

alone held out hope, and the patients should be given some small weekly wage and those with unsuitable homes boarded out. For every penny we said we could not afford to-day, the future generation would have to pay a pound.

Miss DARNELL (London Association) spoke of the early difficulties of statutory supervision in her area and the impossibility of getting the trust and coöperation of the parents unless fully trained and sympathetic workers were ready to give individual treatment to each case. Both she and Alderman KATHLEEN CHAMBERS (Bradford) emphasised the great value of and need for occupation centres.

On Thursday afternoon the Right Hon. H. P. MACMILLAN, K.C., took the chair, and a discussion on

Borderland Cases

was opened by Lieut.-Colonel E. GOODALL (Superintendent, Cardiff City Mental Hospital). He said that mental and nervous disorders caused more widespread havoc and misery in the home than any others, but no provision was made for the early institutional treatment of these maladies, and they did not often benefit by the munificence of philanthropists. He quoted the evidence given by Sir F. Mott and himself before the Royal Commission on this subject, and emphasised the need for linking up psychiatry with general medicine (vide THE LANCET, Sept. 11th, 1920). The practical teaching of psychiatry to medical students and nurses in this country was absurdly inadequate. He quoted the Boston Psychopathic Hospital as an ideal psychiatric clinic.

Dr. W. R. K. WATSON (Senior Medical Officer, H.M. Prison, Brixton) said that he thought the subnormal population of this island might safely be calculated as one million. Experiments on prisoners showed that their intelligence did not fall below the general average, although the delinquent group contained a slightly higher percentage of subnormals than the non-delinquent population. Not more than 5 per cent. of subnormals were delinquent; most of them were amiable and harmless, and indeed formed a very useful part of the people, willing to undertake humble unskilled labour. He doubted whether the proportion of subnormals was higher now than it had always been, and thought that in any given family the tendency still was for mental defect to die out. The majority of subnormal delinquents showed not so much intellectual defect as emotional instability, and many of them were unfit for prison discipline. Such cases were always regarded as medical, and were specially treated. While our prisons might not be the best conceivable places for borderline cases, they were the best at present available. The most promising plan for improvement would be to set aside certain prisons for the various kinds of borderland delinquents; a start in this direction had already been made. It was very rare for these people to show shame at the idea of prison; their infirmity automatically mitigated their punishment.

In the subsequent discussion Dr. T. A. ROSS said that the problem would never be satisfactorily solved until every hospital had its mental clinic, and Dr. HELEN BOYLE ridiculed the idea that there was not enough money for the required measures: it was apathy, slackness, and want of understanding that blocked reform. We needed well-informed social workers, good vocational guidance, clinics with beds, and a wider outlook in social service.

Dr. H. CRICHTON-MILLER said that it was time that some central administrative department undertook the responsibility of providing a suitably mitigated environment for the neurotic and the criminal, who suffered from the common trouble of mal-adjustment.

Dr. LETITIA FAIRFIELD said that the statistics published by the Board of Education were quite unreliable, and nobody had any idea how many backward and defective children there were in the country. It was most important to get hold of the mal-adapted child early in its life.

On Friday, Dec. 3rd, the morning session was occupied with a discussion on the Training of Teachers for Special Schools, under the chairmanship of Dr. H. B. BRACKENBURY.

At the afternoon session Sir ARCHIBALD BODKIN took the chair, and opened a discussion on Encephalitis Lethargica and its After-effects.

(To be concluded.)

MEDICINE AND THE LAW.

The Case of Miss Marmion.

IN the note on this case of alleged manslaughter published last week, it was stated that after the briefest of intervals the jury found the two accused doctors "not guilty," their commitment on the coroner's warrants being, as usual, ignored. It should be added that both the doctors had visited the local police-station immediately after Miss Marmion's death to report the circumstances, and both gave categorical evidence in their own defence. They were asked in cross-examination why they had not given to the coroner the full explanation which they gave at the Assizes, and this point was, naturally, pressed, for the earlier a defence is disclosed, the better impression of bona fides is given. But it must be remembered that a coroner's inquest is a peculiar tribunal. It is a roving inquiry, with no parties to the record, and indeed with no record at all until the coroner's jury has given its verdict. No detailed charge of crime is investigated; there is no definitely accused person, and there are no strict rights of calling witnesses on behalf of any person whose conduct may be reflected upon. When, as in this case, pathological evidence is given at the inquest on behalf of the police, persons who are likely to be accused of crime are reasonably advised to defer defence until they know exactly where they stand. It was mentioned last week that Mr. Justice Branson informed the jury that he entirely agreed with their verdict of acquittal. Legal purists deprecate such expressions by judges on issues of fact which are outside the judicial province; a jury does not require a judge's approval or disapproval of its verdict, and, if approval is to be expressed generally, a judge's silence may carry the imputation of disapproval. But the judicial confirmation in the present case will be gratifying to the acquitted doctors and to the London and Counties Medical Protection Society, by whom their defence was undertaken.

Hospital Refuses Attempted Suicide.

At an inquest held at New Mills, Derbyshire, on Nov. 23rd on a married woman aged 33, who died after drinking lysol, it was stated that she was ordered to be taken to Stockport Infirmary on Sunday, Nov. 21st, the day after she drank the disinfectant. On arrival at the hospital the woman was asked if she took the lysol herself. She replied that she did. The surgeon stated that suicides were not taken into the hospital for treatment and provided a note for the woman's admission to the Shawheath Union Hospital at Stockport. On arrival there the husband discovered that Shawheath was a Poor-law hospital, and declined to allow his wife to be taken in; she was brought home and died a few hours later. The coroner had asked the police to let the authorities at Stockport know that the woman had since died, and to ask them if they would like to attend the inquest. A letter was received from the resident surgeon, stating that they are not allowed to take suicide cases into the hospital for treatment, because the police do not find it possible to allocate to them people who are not responsible for their after actions. Provision had been made for such cases at Shawheath and the hospital authorities had been requested to transfer any cases to that hospital for treatment. This happens in every case, and is one of the regulations of the hospital. The coroner returned a verdict that the woman died from lysol poisoning taken during depression caused by ill-health.

Medical Witnesses and Long Journeys.

At Romford on Monday last, Judge Crawford protested against the time of two medical men being taken up unnecessarily, long journeys being involved, in an action which might easily have been heard in the district in which the accident happened. In the case before the court—a motor collision—the accident occurred near Uckfield, Sussex, and plaintiff, who lives at Eltham, brought the action at Romford as defendant lives within the jurisdiction of that court. To prove his case—which, incidentally, he lost—he called Dr. Cyril Williams, of Uckfield, who is attached to the Cottage Hospital, and Dr. John Higginton, of Eltham. Dr. Williams, before giving evidence, said he would like to know whether he was entitled to reasonable remuneration for his services. In order that he might reach the court at the proper time it had been necessary for him to travel to London on Sunday night, and engage another doctor to carry out his duties during his absence. For this he had just been paid one guinea. The judge said that such a payment was ridiculous. The doctor was entitled to reasonable expenses for all the trouble and inconvenience he had been put to. Counsel for plaintiff said they did not know Dr. Williams had had to travel to London the previous night. He had consulted his clients in the matter. Judge Crawford: "Consulting your clients does not give Dr. Williams much satisfaction. He should be paid proper expenses. I have no power, unfortunately, to order it, but I hope it will be done." Later the judge again referred to the subject. One doctor, he said, had been called from Sussex and another from Eltham, to the great inconvenience of both. There was no reason whatever why the case could not have been tried in a court where the hearing would not have necessitated such long and unnecessary journeys.

COLLOIDAL LEAD IN MALIGNANT DISEASE.

DEMONSTRATION BY THE LIVERPOOL MEDICAL RESEARCH ORGANISATION.

(FROM OUR LIVERPOOL CORRESPONDENT.)

A SMALL but representative and distinguished gathering were present on Nov. 30th, when, for the fourth year in succession, a general demonstration was given of the methods and results of the treatment of malignant disease by the intravenous administration of colloidal lead. Surgeons attended from London, provincial centres, and several foreign schools, while the chemical and laboratory side of the work was submitted to investigation by men eminent in these branches.

The day began at 9 A.M. with a short address by the Director, Prof. W. BLAIR BELL, on the aims and methods of the organisation. This was followed by a demonstration by Prof. ERNEST GLYNN. It was usually very difficult, he said, to decide whether histological changes found in human cancer after lead were due to the treatment, because regression, at least in certain areas, was characteristic of malignancy. In the following case, however, the evidence that lead had produced extraordinary histological changes was conclusive, though associated sepsis might have contributed in some obscure way.

H. A., male, aged 46, had a spheroidal-celled cancer of the breast of 17 months duration excised. Lead was administered immediately afterwards. The total received in 18 days was 0·175 g., the last dose was 0·075 g. 11 days before death. He died from empyema. There were a few metastases in the liver, suprarenals, lungs. Five of these, examined microscopically, showed an extraordinary regression of the epithelial cells; they resembled those of a badly-preserved sarcoma, though the post-mortem was only 30 hours after death. There was practically no "healthy" cancer. The same changes were present in an infected fibrosed lymphatic gland, though less marked, for some of the epithelial cells appeared healthy, even mitoses being present.

The lesser degree of regression in the relatively avascular and fibrosed lymphatic gland indicated, said Prof. Glynn, that the action of lead chiefly depended upon a well-developed and unobstructed blood-supply and perhaps lymph-supply. It was histological evidence of an inherent difficulty in treating cancer by lead or any other drug or by serum.

Prof. W. J. DILLING then spoke briefly on the work carried on in his department to test the toxicity of the various lead suspensions used. All were thoroughly tested on animals. It was found that those prepared by Prof. Lewis had practically no toxic effects upon pulse, respiration, cardiac action, or blood pressure, although even small variations in the technique of manufacture were sometimes followed by serious results as regards toxicity. A series of tracings were shown making abundantly clear the points referred to.

Laboratory Demonstration.

In the Muspratt Laboratory of Physical and Electro-Chemistry Prof. W. C. M. LEWIS, F.R.S., in the course of a brief account of the general programme of work that was being carried out in physical and bio-chemistry, discussed in particular the problem of permeability of tissues from the standpoint of the work of Clowes, and the phosphatide and cholesterol contents of tissues. Emulsification experiments had shown that phosphatides favoured permeability, whilst cholesterol lessened permeability. On this basis, analyses of normal and malignant tissues led to the conclusion that malignant tissues had a raised permeability. Reference was also made to the problem of determining hydrogen-ion concentration.

Dr. M. JOWETT reviewed briefly the subject of glycolysis, and discussed preliminary results that had been obtained on the glycolytic behaviour of rabbit chorion and on the effect of lead on glycolysis.

Dr. H. MILLET described the methods in use of making lead suspensions, and referred to methods of stabilisation.

Dr. J. BROOKS gave an account of work bearing on the fate of the lead suspension in blood, which showed that conversion into lead phosphate ultimately took place.

Demonstrations were then given of the preparation and testing of the lead suspension, as prepared in the Muspratt Laboratory, and of its ultra-filtration and cataphoretic behaviour, together with the methods used in studying glycolysis.

Cases and Specimens.

The party was escorted at 11.15 to the new gynæcological theatres of the Royal Infirmary, where a number of patients were shown. The specimens, where such had been removed, with their microscopic appearances, had previously been exhibited in the obstetric department of the University. Some of these were exceedingly striking, although not necessarily to be taken as examples of cure of malignant disease. For instance, there was a patient with an inoperable carcinoma of the rectum who had had a colostomy done for the disease in September, 1925. Examination by a distinguished London surgeon failed to detect anything abnormal. A point of further interest in this case was that although six months pregnant at the time when lead treatment was commenced, she had gone to full term and been delivered naturally of a healthy child. There was also seen a patient whose breast had been removed for cancer in 1921 and who had had a recurrence, so that in January of this year the condition was regarded as quite inoperable, there being a hard, fixed mass in the pectoral region and some œdema of the arm. She has now got no mass, although the region is slightly tender, and the arm is sensibly softer.

The visitors lunched with the staff at the Exchange Hotel and then adjourned to the Northern Hospital, where Dr. LOUIS CUNNINGHAM, the assistant director of the unit, showed a further series of cases. He then demonstrated and described the various points in the administration of the drug, speaking of its toxic effects, the dosage, and the precautions to be observed. The amount aimed at is 0·6 g. of lead given over

varying periods, the first course being often three doses of 15 or even 20 c.cm. of the 0·5 per cent. solution twice a week. The most careful observation of kidney efficiency and the blood changes is of fundamental importance. Patients are encouraged to return at intervals for further isolated doses, as, of course, the ultimate fate of the cancerous deposits in the body is still unknown.

A large number of patients was then shown at Prof. Blair Bell's nursing home, a few of whom may be briefly mentioned.

1. Malignant teratoma of testes, removed in Australia, secondary nodules in tibia and astragalus. Treatment by lead, followed by operation (16/4/25), foci lightly shelled out. No further symptoms. (0·825 g. of lead.)

2. Mixed cell sarcoma scapula (0·2 g. lead + X rays). Disappearance of growth and glands (3/3/24). No trouble since.

3. Carcinoma in lactating breast. No operation. 0·29 g. lead given 20/10/20. Now perfectly well and breast is functioning.

4. Carcinoma mammæ; inoperable on account of local fixation, January, 1926; full course of lead associated with X rays; now greatly improved and considered operable; microscope = spheroidal cell cancer.

5. Sarcoma small intestine confirmed by section; operation February, 1923, short-circuiting, growth inoperable; 0·45 g. lead: now in good condition.

6. Carcinoma uterus and vagina: uterus removed November, 1924, nodules in vagina left behind, but piece removed for section; nodules in vagina now all gone; 0·69 g. lead.

7. Carcinoma liver and omentum, confirmed by section; 0·28 g. lead, 19/7/23. Now in good health.

The following points were stressed by Prof. Blair Bell. Although many of the cases had received no treatment but lead, he believed that the right course to take at present was radical operation first, where possible, and then injection of lead within a few days. A large number of cases were first seen when their condition was already so desperate as to give no method a fair trial; even some of these had been restored to health. He had had to refuse to treat cases sent from elsewhere without microscopic evidence of malignancy unless he was able to get permission to remove a piece for section himself. The lead preparation, known as "chcriotrope," had, said Prof. Blair Bell, been withdrawn owing to the severe symptoms produced. Arrangements had been made, however, for supplying those centres where treatment was already being carried on. Certain centres had coöperated by sending workers to study the treatment in Liverpool, and one of these was able to report 8 cases out of 49 with disease apparently arrested or very greatly improved. It would be remembered that much the same percentage of success was claimed out of the first 250 cases treated. The total number of cases treated is now about 600.

Impressions of a Visitor.

The impressions left by the day's programme amount to this. A large amount of care and energy is being expended by the Research Association on the study of the effect of lead on the tissues, normal and abnormal, from the pathological, chemical, and toxicological points of view. This work is of a high order and likely to be of permanent value. The Liverpool workers recognise that the therapeutic side of the investigation is still in the experimental stage, and they are making every effort to check varying factors and to establish observed facts. Every facility was offered to the visitors for seeing the scientific activities of the organisation; they were free to handle the specimens and to examine and cross-question the patients. If some of the cases are viewed in an optimistic light, it should be borne in mind that such an outlook is essential if work of this kind is to go on at all; it is for others to supply the keen scrutiny of scepticism. The 49 cases submitted by Prof. Blair Bell form a very remarkable series, and although, taken individually, one might hesitate to pass judgment, taken in the aggregate it is clear that a step forward has been made towards the solution of the mystery of malignant disease, and other workers will have to take into account the results of the treatment with colloidal lead.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Back-strain as a Cause of Incapacity.

To judge from the discussion of Mr. W. A. Cochrane's admirable paper at the Edinburgh Medico-Chirurgical Society last week, the number of true persons who feign back-strain is extremely small; Mr. Cochrane himself could only remember one from his experience in the out-patient department of the Edinburgh Royal Infirmary. People who bring their complaints up to hospital are likely, of course, to be those whose pain is most severe, but Mr. Cochrane made it clear that correct diagnosis must take account of many elements which are not always emphasised. One contributor to the discussion said that during the coal strike he had observed a distinct falling-off in the number of cases of back-strain referred to him, which supports the opinion that the amount of malingering associated with the condition has been somewhat exaggerated. It was agreed that only active treatment on radical lines in the early stages would prevent much genuine disablement later; only too often the treatment of the first stage enables the patient to return to work, but leaves him a ready prey to subsequent disablement on slight strain. This is a very important point, and it is hoped that Mr. Cochrane's views and experience will be more fully discussed. The complicated factors leading to back-strain are now getting to the stage of really scientific analysis.

The Dr. Elsie Inglis Memorial.

It seems only yesterday that I last spoke with Elsie Inglis in Queensferry-street. I see the gleam of triumph in her eye as she told me how at last the Scottish Women's Hospitals were to be accepted, and how she had satisfied "the authorities" down even to the bed socks! Her work in Edinburgh, her heroic adventure in Serbia, her death as she landed from her great crusade, make one of the great stories of the world. It will inspire the future as her vivid presence inspired the past.

When the Scottish Women's Hospitals had done their work the remnant of the fund went to help in building the Dr. Elsie Inglis Memorial Hospital on a beautiful site commanding a view of King's Park, behind Holyrood. The other day this hospital, which is working under full pressure, was visited by a party of Women Citizens, who were charmed with everything about it—building, locality, and outlook—but were given a hint that funds are, or may be, a difficulty and that the number of beds may have to be reduced instead of increased. If this be so, it must be remedied. The hospital's work is in direct continuation of what Dr. Inglis did in Edinburgh from long before the war, and it is a worthy symbol of her adventure. Such a monument cannot be dishonoured and when the day comes to appeal for money the story of this woman, stirring once more the heart of her country, will triumph over every obstacle as she did herself.

A New Hospital for Falkirk.

Falkirk, the centre of the "light castings," has more than recovered from the industrial depression from which it suffered during the war, and a new hospital has been needed for some time. The present hospital has only 74 beds, and there is a waiting list of 400. Not long ago the Duke and Duchess of Montrose joined in the ceremony of cutting the first sod; the families which they represent—Hamilton and Graham—have been bound up with the history of Falkirk for hundreds of years. The new hospital will be built on a site of 12 acres; but, as this is not all available yet, the immediate objective is the provision of 130 beds, later increasing to 250. The institution will be fully equipped as a modern general hospital, but the scheme has one feature of unusual interest. Its promoters are negotiating with the burghs of Falkirk, Grangemouth, and Denny, and with the Eastern

District of Stirlingshire for the provision of a maternity hospital to be run as part of the new organisation, and this is an excellent example of the steadily growing coöperation between voluntary and official medical services. Such coöperation is manifestly in the interest of both. It secures to the hospital the advantage of definite ad hoc income, and to the local health authorities the advantage of a hospital adequate in size and equipment. There is a growing belief that the medical needs of the immediate future will best be served by larger units than the older cottage hospitals, and improved transport makes the use of these larger units possible.

UNITED STATES OF AMERICA.

(FROM AN OCCASIONAL CORRESPONDENT.)

Thyroid Tumours in Bone.

AMONGST papers read at the Clinical Congress of the American College of Surgeons in Montreal was one by Dr. R. Alessandri, of Rome, entitled Thyroid and Parathyroid Bone Tumours without Primary Lesion of the Thyroid Gland. After alluding to the frequent metastasis of malignant thyroid growths of the skeleton, he pointed out that cases had been reported of secondary growth in bones where the lesion of the thyroid gland itself was not to be considered either clinically or anatomically as true thyroid neoplasm, but had all the characteristics of simple colloid or hyperplastic goitre. He believed that there were benign goitres which produced metastasis, although many authors had denied their existence, asserting that the presence of metastasis was a sure proof of malignancy. Most cases were undoubtedly of this type, but he thought that the question was not solved definitely; there were, indeed, cases in which no change in the thyroid was present. He described two cases in which he had operated on thyroid tumours of bone (of which illustrations were shown) without being able to discover any abnormality of the thyroid gland. Neither before the appearance of the skeletal growth, nor during its development, nor after the operation, had the thyroid exhibited the slightest change or enlargement. Neither in those regions of the neck, nor of the tongue, nor where aberrant glands could be found was there anything suspicious which could represent the primary site of a tumour whence the metastasis might have come. It was not, he thought, possible to suppose the presence of a primary neoplasm; even if small it should have been present before the localisation in bone, and ought to have revealed itself before the end of the considerable time mentioned in the reports. Dr. Alessandri, therefore, thought that it must be admitted that bone tumours of the thyroid or parathyroid type could be found without any primary lesion of the normal thyroid gland or of an accessory gland.

Rabies in New York City.

The Health Commissioner of New York City, Dr. Harris, has been drawing the attention of doctors and veterinary surgeons to the question of establishing stations at which dogs may be inoculated against rabies. He is going to propose a regulation to the Board of Health requiring owners of dogs to have them vaccinated against rabies as a condition of receiving a licence, and he has issued statistics showing that in the first six months of this year 200 cases of true rabies were found in an examination of 395 dogs. During a similar period in 1925, 25 cases were found among 152 dogs. The records compiled by the Department of Health from reports made by policemen and hospitals show that during the first six months of this year 7030 persons were bitten as compared with 4077 in the corresponding period of last year. Dr. Harris is anxious to impress on the medical profession the importance of specific treatment for persons bitten by rabid or suspected animals. The immediate reason for his campaign is the recent death from rabies of a boy in the outskirts of New York, but, as a matter of fact, this was an exceptional event. Although rabies in dogs is at present widespread, and large numbers of people are bitten every year, this is the first case of human rabies recorded in the city for more than three years.

Medical Examination of Students at Columbia.

Dr. William H. McCastline, medical officer of Columbia University, advocates annual medical examination of all students, and insists that medical examination should be made carefully and scientifically or not at all. Much harm is being done, he thinks, by careless routine examination, and the present perfunctory investigation is practically worthless. So as to carry out an adequate scheme, he suggests that money be raised to pay the staff of trained and experienced medical men essential to make the examinations properly, and he proposes that a medical service building, with suitable space and equipment, should be put up by the University.

The Hospitals of the United States.

In 1900 there were 2419 hospitals in the United States. In 1925 the total was 7340, with a combined capacity of 814,000 beds, requiring almost a million medical men, nurses, and employees to care for the 12 million patients treated. Having about one-nineteenth of the population of the United States, New York City possesses almost one-twelfth of the country's hospital beds; 134 hospitals are maintained, besides proprietary institutions and hospitals for the care of the mentally diseased. This public service represents an investment of about £40,000,000 in land, buildings, and equipment, and is worked at a cost of more than £8,000,000 a year. About one-third of the investment represents municipal institutions, the other two-thirds being derived from private philanthropy.

Medicinal Alcohol.

In order to prevent the diversion of medicinal whisky from its proper purposes, and in order to replenish and maintain the supplies available for prescription—this requires the distillation of 3 million gallons every year—the Treasury Department of the United States Government has proposed the creation by Congress of a private corporation which shall be a "beneficent monopoly," and shall have authority to buy and own all the medicinal spirits in the country. This corporation, if created, will be the sole source of supply of medicinal spirits from the time of its creation. It will provide for manufacture, under Government regulation, and for distribution of the liquor direct, by American railways express, to retail druggists. At present the medical man is allowed by law to prescribe yearly a certain amount of alcohol for medicinal purposes. It is argued that existing supplies of whisky have been reduced to enough for about five more years, and as whisky must mature for at least four years before being fit for medicinal use, its manufacture for replenishment ought now to be undertaken by the Government. Equally important, say the advocates of Government control, is the fact that existing laws make it impossible for the distribution of liquor to be so controlled that it cannot be used for ordinary drinking. When the Prohibition law forbade its manufacture and sale, some 60 millions of gallons of beverage whisky were left in the hands of private owners, who were authorised to sell it to wholesale and retail druggists for medicinal purposes. It is claimed that the proposed new measure would lead to a very large saving in the administration of the Prohibition law, would ensure the supply of pure whisky for the patient on medical men's prescription, and reduce the cost to the purchaser. It would also abolish many of the abuses inherent in the existing system. Whisky is practically the only form of alcohol prescribed by doctors in this country.

New York Academy of Medicine.

On Nov. 17th a dinner was held in New York to celebrate the completion of the new building of the New York Academy of Medicine in 103rd Street and

Fifth Avenue. About a thousand medical men were present. The opening of the building marks the end of years of striving to find a suitable site for the Academy's home. The main difficulty has been to house the library, which contains 140,000 books, and is said to be the third largest medical library in the world. In the building just opened the books are contained in a separate building, four and a half stories in height, comprising nine floors of stack space with ample room for additions. This has two reading rooms, to seat 180 persons, and is open to all medical students and to medical men who are not members of the Academy. The periodical library alone contains 100,000 pamphlets and 1500 current medical and scientific journals. In the remaining building there is an auditorium with room for 700 people, and offices, lecture halls, and headquarters of medical societies.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH

THE following table gives some of the statistics for 1925 of the City of Manchester and four county boroughs. Dr. A. E. Brindley complains of unnecessary smoke in Derby, and that too little attention is given to its abatement, in view of the high death-rate from chest trouble. If, however, the Lancashire group of towns had had the same respiratory death-rate as Derby there would have been a saving of 1616 lives.

Name of town.	Estimated mid-year population (R.-G.).	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.	
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Heart disease.	Infant mortality.	Maternal mort. from childbirth.
Manchester .	758,235	18·6	14·4	1·56	1·39	3·5	1·5	96	3·2
Salford . ..	244,700	18·8	13·9	1·60	1·20	3·6	1·0	105	3·7
Bolton	180,400	16·3	13·6	1·02	1·33	3·1	1·7	87	4·7
Derby	134,400	18·9	11·9	1·00	1·26	2·2	1·6	74	2·4
St. Helens ..	109,600	23·9	12·0	1·11	0·77	2·9	1·1	100	5·3

Manchester.

Dr. R. Veitch Clark reports that there were 82 cases of encephalitis lethargica, with 24 deaths. He points out that the incidence of puerperal fever has not fallen. There were 179 cases notified during 1925 as compared with an average of 113 for the preceding decennium. Puerperal infection is being treated in Monsall Hospital by lymph drainage of the uterus, and this method is combined with chemotherapy and transfusion of immunised blood for the acute hæmic infections. The results from the lymph drainage treatment were uniformly satisfactory; all the fatal cases except one were desperate from the moment of admission. Attention is drawn to the sharp rise in the respiratory deaths coinciding with the November fogs, and the present position with regard to the proposed regional smoke-abatement committee is indicated. The Ministry of Health is to be asked to make an order forming a joint district. The area will be divided into inspection districts on the basis of 200 to 250 chimneys per district. Each district will be governed by a committee elected from the health committees, and each inspection district committee will elect two members to form the regional council, which will formulate the policy for the whole region. There will be some 20 inspection districts in the region, and at the outset the present executive committee are not prepared to make definite recommendations with regard to the domestic smoke problem. At the end of 1925 a scheme for reorganising sanitary inspection came into operation. The chief change will be the abolition of a number of special inspectors; overlapping and dual visiting will be avoided, and the work of the district inspectors will become more interesting and varied.

Dr. Clark refers to the need for daily clinics for venereal disease, with facilities for intermediate treatment at all times of the day. The unification of clinical control and the provision of maternity beds for pregnant women also require attention. Plans have been approved for the provision of 210 beds at Abergele Sanatorium for the treatment of children suffering from tuberculosis. The report gives much detailed information about methods of treatment adopted at the various hospitals, including experience of the Schick, Dick, and Schultz-Charlton tests, the following up of patients tested with tuberculin during the years 1919 to 1923, the value of the Weiss urochromogen reaction in pulmonary tuberculosis, &c. Lieut.-Colonel J. W. Brittlebank, the chief veterinary officer, reports that the milk supply of 292 farms situated outside Manchester was examined for tubercle and that 8·2 per cent. of the samples were tuberculous. Farmers, he thinks, are getting to understand what is meant by cleanliness, but he is not hopeful of great results until steam sterilisation plant is in general use. The sale of graded milks makes little headway in Manchester. Colonel Brittlebank believes that at least half the milk distributed in Manchester is rendered safe for the consumer by pasteurisation. Dr. Clark shows that the building of houses during the past few years has not kept pace with the natural increase of the population. He mentions three standards for the measurement of overcrowding—viz., the Registrar-General's, of more than two persons to a room; the Manchester standard, of more than two and a half persons per bedroom (two children under ten being counted as one person); and his own, of conditions in houses which prevent the proper separation of the sexes for sleeping purposes. Under the first standard he estimates that 8000 families are overcrowded, under the second 25,000, and under the third 29,000. The total number of families in the city at the time of the 1921 census was 163,939. Dr. Clark's final estimate is that the number of new houses required by the end of 1926 is 17,622.

An account is given of the work of the Manchester Committee on Cancer.

Salford.

Dr. H. Osborne reports the opening of a municipal maternity home and babies' hospital, with room for ten maternity cases and 18 babies. All the maternity cases attend a special ante-natal clinic. The great need of the maternity and child welfare scheme is for better accommodation at the centres. At present there are two primary and seven subsidiary centres. All are inadequately housed, and Dr. Osborne's recommendations include the provision of three primary centres, if possible in the same buildings as school clinics, and six subsidiary centres. It is pointed out that the density of the population of Salford is far greater than that of any other Lancashire town. There is no suitable building land left, and Salford is hemmed in on every side by growing urban districts. There are 3000 people clamouring for houses, but the great majority can never be housed in Salford. Since 1913 the panel practitioners of Salford have been remunerated on an attendance basis. The only districts with a similar scheme are Manchester and the Isle of Man. From Jan. 1st, 1927, the capitation system will be adopted in Salford.

With a view to smoke abatement, the classes for stokers at the Salford Technical College are to be continued. The Health Committee has also decided to abolish the permissible limit of three minutes' dense black smoke in the half-hour and to consider each case on its merits. Dr. Osborne points out, however, that domestic smoke is the more serious part

of the problem, and that "when this country decides that coal must be carbonised before being burnt then smoke inspectors will lose their jobs." He has experimented during the year with fire-brick grates of the well type and dry gas coke from vertical retorts, and finds that this type of coke gives a beautiful radiant fire and heats the room somewhat better than coal and at two-thirds only of the cost. The report gives full details of these experiments, and also of experiments on chemical disinfection, which show that disinfecting power increases directly with the temperature; for example, the same solution of phenol is about three times as powerful a disinfectant at blood heat as it is at freezing point.

The bulk of the milk comes from farms in Cheshire, Lancashire, Yorkshire, and Derbyshire. Of 331 samples from the outside farms 29, or 8·75 per cent., contained tubercle bacilli. This corresponds closely to the Manchester percentage of 8·2. The towns get their milk from similar sources. The tuberculous milks were successfully followed up, as on 26 of the 29 farms visited 30 cows were found with tubercle of the udder. In the three remaining farms cows had been removed between the taking of the sample and the date of inspection. Midwives attended 3445 of the 4597 births, and sent for medical aid in 1428 of their cases. There have been several recent outbreaks of pemphigus neonatorum. Each outbreak has been confined to a certain area, and it has been impossible to trace any cause. From June, 1924, to the end of the year there were 79 cases, with 11 deaths. The disease has been compulsorily notifiable in Salford since March, 1926.

Bolton.

Dr. C. W. Paget Moffatt reports that a scheme for the conversion of the principal sewage works from chemical precipitation to the bio-aeration system at an estimated cost of £74,500 has been approved by the Ministry, and is now in progress. The original intention was to provide four acres of filters for the further treatment of the effluent, but this portion of the work has been postponed for 12 months in order to ascertain whether there is any necessity for this final filtration. For smoke abatement Dr. Moffatt, like Dr. Osborne, pins his faith to smokeless fuel. He draws attention to the prevalent practice of firing the chimneys of dwelling-houses instead of having them swept, thus creating a nuisance to the neighbours "very much worse than that caused by any factory chimney." He wishes the magistrates would take a more serious view of this offence. Bolton's housing problem is exceptional. The population is now the same as it was at the census of 1911, when there were 41,585 houses with 4·34 inhabitants per house. In 1925 there were 44,193 houses with 4·08 inhabitants per house. The population was the same, but there were more and smaller families. It is difficult to say how many extra houses are needed; 1500 applications have been made, but Dr. Moffatt thinks that not more than half of them are genuine. It is waste of time to theorise about the number required. Houses should be turned out in batches of 100, and this process should continue so long as they are absorbed. All the cases of overcrowding to which attention was drawn in 1925 were abated. There are several small unhealthy areas. To deal with these would involve the demolition of 200 houses. There are 1000 back-to-back houses, and the conversion of each pair into one through house would involve the loss of 500 more houses. Street improvements will involve the demolition of a few more. Dr. Moffatt estimates that 800 houses are required to compensate for these three prospective causes of shortage. The public analyst for the borough, Mr. H. Hurst, thinks that the standard for Grade A milk is much too lenient, and suggests a count of 50,000 and *B. coli* absent in 1-10th of a c.cm. Boric acid is still being used extensively. Thus it was contained in five out of eight samples of potted meat, in six out of seven samples of mincemeat, and in all the samples of margarine (13), lemon-cheese (7), cakes (6), and fruit salad (1).

In 1924 there were 40 cases of encephalitis lethargica, with 17 deaths, and in 1925 23 cases, with 13 deaths. During the five-year period ending with 1925 there were 74 cases notified, with the following result according to inquiry made June, 1926:—22 deaths; 1 committed suicide; 5 died from other diseases; 23 made a complete recovery; and 23 are mentally impaired. The attendance of women at the clinic for venereal diseases is discouraged by the inadequacy of the premises. Plans have been prepared for a new clinic.

Derby.

Dr. A. E. Brindley reports that the failure to rid the borough of small-pox quickly was chiefly due to the refusal of the contacts to be vaccinated. Less than 9 per cent. of the persons in the home, who had been in more or less intimate contact with the patient, were vaccinated or revaccinated. There were 746 notifications of small-pox during the year, with no deaths. There were no serious complications except in the case of a baby who lost the sight of one eye. It was estimated in June, 1926, that the epidemic had cost the borough about £15,000. Dr. W. H. Wray, the tuberculosis officer, thinks the results from the treatment of adult pulmonary tuberculosis are so unsatisfactory that efforts should be concentrated on dealing with the children. Although it takes considerable time and persuasion to obtain sputum from children with evidence of bronchial irritation, tubercle bacilli were, nevertheless, found in the sputum of 50 children during 1925. During the past two years Dr. Wray has observed a more virulent type of pulmonary tuberculosis with very rapid lung infiltration. Arrangements are being made for the admission of non-pulmonary tuberculosis to Bretby Hall Orthopædic Hospital. Dr. Wray would like to see allotments provided for tuberculous patients, each with a shelter. If the patients were induced to spend all day on the allotment and to do some gardening under supervision the results, he thinks, would be less costly and more satisfactory than those of sanatorium treatment.

A special clinic was provided in September for the supervision of ailing children between the ages of 2 and 5 years. The total of births was 2527, but only 188 expectant mothers attended the antenatal clinic. There is much overcrowding, although the council have provided 1020 dwellings in the last five years. The demand for Grade A milk has increased from 13½ gallons daily at the end of 1923 to 33¼ at the end of 1925—not a sensational increase. Among suggestions for the future Dr. Brindley includes the provision of more playgrounds for small children, in view of the increasing danger of the streets, and more rapid progress with the conversion of tub closets and privy middens. At the end of 1925 there were still 1968 tub closets and 203 privy middens.

St. Helens.

Dr. Frank Hauxwell shows that his borough is very well supplied with open spaces and parks, but that there are several congested areas which require opening out and replanning. Charts show the decline of the birth-rate from 46 to about 24, and of the death-rate from about 25 to 12 during the last 50 years, and of the infant mortality-rate from 180 to 100 in the last 25 years. The old small-pox hospital has done good service by providing 10 beds for maternity cases and 20 for ailing infants. Arrangements have now been made for the treatment of maternity cases at the new maternity block of the St. Helens (Voluntary) Hospital, which has 15 beds, and for the ailing babies to be treated at the isolation hospital. Progress in the reduction of the shortage of houses is very disappointing. Since 1914 the population has increased by 8825, but only 880 houses have been built. An orthopædic scheme has been approved. Besides an orthopædic centre in St. Helens, six beds will be subsidised at the Liverpool Children's Hospital and six at the open-air hospital for children at Leasowe.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDING NOV. 27TH, 1926.

Notifications.—The following cases of infectious disease were notified during the week: Small-pox 313 (last week 353), scarlet fever 1985, diphtheria 1185, enteric fever 51, pneumonia 1031, puerperal fever 49, puerperal pyrexia 140, cerebro-spinal fever 9, acute poliomyelitis 55, acute polio-encephalitis 6, encephalitis lethargica 61, continued fever 1, dysentery 6, ophthalmia neonatorum 154. There were no cases of cholera, plague, or typhus fever notified during the week.

The total number of cases of acute poliomyelitis and polio-encephalitis taken together—namely, 61—is again substantially higher than the previous week, 10 cases having again been notified from the County of London, all of them on the south side of the river, 5 from Leicestershire (Leicester 3, Hinckley and Ashby-de-la-Zouch 1 each), 3 from Notts (Nottingham 2, Stapleford R.D. 1), 4 from Surrey (four separate districts), 5 from Warwick (Birmingham 3, Coventry 1, Rugby R.D. 1), 3 from Wilts (Salisbury 2, Tisbury R.D. 1), 3 from Yorks West Riding (Conisborough 1, Harrogate 2), 3 from Glamorgan (Cardiff 1, Merthyr 1, Neath R.D. 1), the remainder in ones and twos from many other counties. (Any return from Rutland is missing.)

Of the 313 cases of small-pox, 250 were reported from the county of Durham (the chief areas being Brandon and Byshottles 60, Crook 12, Hetton 12, Jarrow 16, Shildon 11, Willington 27, Chester-le-Street 25, Lanchester 34, Sedgefield 11), 10 from Northumberland, and 46 from Yorks West Riding (Sheffield 14, Mexborough 16, and small numbers from eight other areas).

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox, 4 (1) from enteric fever, 8 (0) from measles, 4 (1) from scarlet fever, 22 (4) from whooping-cough, 46 (16) from diphtheria, 69 (17) from diarrhœa and enteritis under 2 years, and 52 (8) from influenza. The figures in parentheses are those for London itself.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Comdr. G. D. Bateman is placed on the Retd. List with the rank of Surg. Capt.

ROYAL ARMY MEDICAL CORPS.

Capts. G. D. Yates, F. M. Lipscomb, H. P. Rudolf, and D. N. Macleod to be Majs.

Temp. Capt. J. F. P. Gallagher relinquishes his commn. and is granted the rank of Lt.

TERRITORIAL ARMY.

Col. A. D. Ducat to be Hon. Col. 56th (1st Lond.) Div.

Lt.-Col. (Bt.-Col.) F. Darlow from the Gen. List, R.A.M.C., to be Col.

Capts. I. H. Lloyd-Williams and W. L. R. Wood to be Majs.

Capt. (Prov.) G. A. Fisher is confirmed in his rank.

Capt. G. T. Symons (late R.A.M.C.) to be Lt. and relinquishes the rank of Capt.

ROYAL AIR FORCE.

Flight Lt. G. R. Hall relinquishes his temporary commission on ceasing to be employed.

RESERVE OF AIR FORCE OFFICERS.

W. G. Weston is granted an honorary commission as a Flight Lt.

INDIAN MEDICAL SERVICES.

To be Temporary Lieutenants.—Parduman Singh and Mangalore Narasimha Pai to be Temp. Lts.

Lt.-Col. J. E. Clements on return from leave to resume charge of his duties as Inspector-General of Prisons, United Provinces. Lt.-Col. C. E. Palmer, Officiating Inspector-General of Prisons, United Provinces, is posted to Allahabad Central Prison as Superintendent. The services of Dr. Muhammad Umar, medical officer, Central Prison, Allahabad, are placed at the disposal of the Inspector-General of Civil Hospitals, United Provinces. Lt.-Col. R. F. Baird, civil surgeon, Allahabad, to officiate as Inspector-General of Civil Hospitals, United Provinces. Dr. B. K. Mukharji, Provincial Medical Service, medical officer in immediate charge of the Colvin Hospital, Allahabad, to officiate as Civil Surgeon in addition to his own duties. Lt.-Col. R. F. Baird, Officiating Inspector-General of Civil Hospitals, United Provinces, has been nominated by the Governor to be President of the United Provinces Medical Council.

Correspondence.

"Audi alteram partem."

SPIRITUAL HEALING.

To the Editor of THE LANCET.

SIR,—We the undersigned medical members of the Archbishop of Canterbury's Advisory Committee on Spiritual Healing should be grateful to any medical practitioner who could supply us with information regarding patients who had received benefit from spiritual healing, whether through an organised Mission of Healing or individually. We appreciate that names could not be given without the permission of the patients concerned and, although we should like to have them where consent is given, we should nevertheless be glad to receive any information which can properly be supplied, as the desire of the Committee is to collect evidence as to the value of spiritual healing and the type of person most likely to be helped by it. Letters may be addressed to any of the signatories.

We are, Sir, yours faithfully,
WILLIAM BROWN,
H. CHARLES CAMERON,
J. WALTER CARR,
W. MCADAM ECCLES,
PERCIVAL H.-S. HARTLEY,
Dec. 6th, 1926. MAURICE CRAIG (Hon. Sec.).

GANGRENE OF THE TOE.

To the Editor of THE LANCET.

SIR,—There is no surgical affection which demands less surgical intervention than the gangrenous toe of a senile or degenerate subject. The term operation should be forgotten in all cases in which after a few days' tentative treatment the gangrene shows a tendency to remain at a standstill, indicating that there is still some circulation existing just proximal to the lesion, and it may be taken as certain that any kind of local traumatism including chemical irritation will be detrimental to Nature's efforts to form a line of demarcation.

Everything possible should be done to raise the patient's power of resistance by nutritious food with discreet use of alcohol, by (when feasible) continuous sojourn in the fresh air, with limb enveloped in wool and crêpe bandages comfortably placed in a well-padded wire cradle, with footpiece at right angle, and elevated in a Salter swing in a bed in which an electric heating cage may be placed at convenience.

During the initial period, when the gangrene is moist, bathing three times daily with non-irritant disinfecting lotions such as warm peroxide (1 in 17), warm carbolic (1 in 70), plus warm corrosive sublimate (1 in 3000) fomentation (without any impermeable dressing) is very helpful. Later, when fœtor and discharge have ceased, and the part appears mummified, painting daily with tinct. benzoin. co. has proved useful, and afterwards when the "sappers" have (with output of serum) established their trench proximal to the line of gangrene, weak boric foments have been found a satisfactory dressing until the involved phalanx becomes sufficiently detached so that with gentle manipulation it may be extracted with forceps like a loose tooth. Having reached this favourable stage there must be no attempt to hasten convalescence, the limb should be kept in absolute rest on splint until the stump has firmly healed. The internal administration of opium in these cases is time honoured; 1 gr. of codeia three times daily appears helpful, and digitalis with strychnia may prove a useful addition.

All this applies solely to cases of gangrene with obvious tendency to limitation, and to those not handicapped by any grave form of general toxæmia. In the latter there is only one chance—viz., amputation through lower third of thigh, and the sooner it

is performed the better. In those cases in which Nature is unable to isolate a dead toe, it may be reckoned as fact that *any* operative intervention at the primary lesion or between it and the main arterial trunk is a waste of time.

I am, Sir, yours faithfully,

Buenos Aires, Nov. 10th, 1926. JOHN O'CONOR.

MEDICAL SCHOOLS AND THE LONDON UNIVERSITY BILL.

To the Editor of THE LANCET.

SIR,—In the Committee stage of the University of London Bill last Thursday, the Government added an amendment which has the practical effect of exempting any theological college which desires exemption from the operation of the regulations proposed regarding the selection of teachers in schools. I regret that the medical schools had not thought it worth while to ask for the same privileges. I cannot think that the medical schools will appreciate the necessity of submitting appointments of their medical and surgical staff to the new Council of the University, upon which they may have no representation whatever, and which will be largely a body unfamiliar with the special needs of hospital schools.

Sir Wilmot Herringham, in his interesting letter to you, thinks that nothing is to be feared from the Crown and the London County Council representatives, and it is the fact that they have not, with one or two exceptions, hitherto taken a very considerable part in the activities of the Senate. I submit, however, that the position will be totally changed with the representation of these bodies increased fourfold, as it will be, upon the future Council of the University. Surely the genesis of the Departmental Committee itself, as an offspring of the Haldane Commission, makes its recommendations rather more significant than they otherwise might be. It was frankly the aim of the Haldane Commission to introduce State control of the University upon the German pattern, and to this end they provided a representation of six members of the Crown and the London County Council out of 15 upon their supreme executive body which they called the Senate. Exactly the same proportional representation of these interests is reproduced by the Department Committee Report. We are, I think, likely to get under these circumstances an entirely new type of representative from the Government and from the London County Council. The future Council will have the only real power in the University. The proportion of educational representatives will, as Mr. Lees-Smith plainly stated in his Minority Report, allow of only a bare majority of Senatorial representatives, and if there is any disagreement between such representatives, the outside members, as one may call them, will exercise a very real control.

Sir Holburt Waring, I think, takes a wiser standpoint than Sir Wilmot Herringham, in the objection he makes to the preponderant academic representation upon the Senate. He is reported to have declared as his opinion that "There are too many academic representatives on the Senate, and they will quarrel among themselves as to how the spoils are to be divided." I find it difficult to understand why Sir Wilmot Herringham should consider the future Council any more impartial than the present Senate, more especially as with the composition of the new Senate and the very preponderant influence of the collegiate representatives, it is inevitable that a large number of heads of colleges will be members of the future Council, and we shall again have the anomalous position that members of the Council will have to decide questions in which they themselves are financially interested on behalf of their colleges, and the "dog-fight" that Sir Holburt Waring foresees cannot fail to occur.

I am, Sir, yours faithfully,

E. GRAHAM LITTLE.

Wimpole-street, W., Dec. 6th, 1926.

SUNSHINE MEASUREMENTS.

To the Editor of THE LANCET.

SIR,—May I draw your attention to a confusion of terms which may lead to a confusion of thought. The *Times* of Nov. 25th, referring to the weather of the 24th, speaks of "Sunlight (ultra-violet rays) figures" at Kingsway 0; at Ventnor 5½. These measurements were made with an acetone-methylene-blue colour test which does not react to light rays, only as is claimed to ultra-violet rays. These, I submit, should not be called sun*light*, but the sun's ultra-violet rays. Why on the 24th there should have been none at Kingsway I know not; here at Putney it was bright sunshine all day long, but at Ventnor there were 5½ units. This brings me to another point. How many units is the maximum for Ventnor in November? From the *Times* of Dec. 22nd, 1924, I infer that the maximum for July is 24; but we might be told. Nov. 25th, 1926, was a very foggy day; there was no ultra-violet light at Kingsway, or at Lowestoft, and only 2 units at Ventnor. On the 26th we were given the hours of sun*shine* on the 25th at various health resorts. These resorts advertise their hours of sunshine, and perhaps we shall have Ventnor advertising its ultra-violet "light" as much more important than sun*shine*.

Ultra-violet light is said to play an important part in ordinary photography; a lens may stop it to some extent, but it is possible to take photographs through a pinhole without a lens. Photographers have their own strips of sensitive paper for testing the light, but they are not standardised. The rapidity of plates is standardised by the Heuber and Driffield method. There are five million elementary school-children in England, and as far as preventive medicine is concerned most of them are dependent on the rays of the sun, so these rays are fairly important.

I am, Sir, yours faithfully,

WALTER EDMUNDS

Putney, Nov. 26th, 1926.

*** We agree with Mr. Edmunds that the figures are unintelligible to the reader when no standard of comparison is given. There seems little doubt that a sunny day in London may give no reading at all on the Leonard Hill test meter.—ED. L.

THE TREATMENT OF FLOUR.

To the Editor of THE LANCET.

SIR,—I have just read the letter of Mr. W. Jago in your issue of Nov. 13th, in which he traverses certain statements by Mr. G. D. Elsdon, public analyst, on the above subject. It appears to me that Mr. Jago misses the main point in this all-important matter of the adulteration of one of our staple articles of food. Persulphates and other chemicals are foreign additions to flour, and whatever their bad or supposed good qualities, they constitute, when added to flour, substances which render this food *not of the nature of flour*. At the very least, therefore, the public is surely right in demanding that the presence of all such foreign substances should be declared to the purchaser, and the public analyst is doing good service to the community in guiding public opinion on this question. I know of no clearer rights that the consuming public should have, if indeed it does not possess them, than the right to a normal article, coupled with the right to demand that it shall know what it is buying. This right of the consumer has now been conceded, in the case of preservatives, by the new Preservative Regulations, and it is an eminently reasonable thing to ask for its extension to the whole range of foods, but especially to that staple food—flour—which is in daily use in every household in the form of bread.

I am, Sir, yours faithfully,

ARNOLD R. TANKARD.

The City Laboratories, Hull, Dec. 1st, 1926.

THE DISSOLUTION OF INSULIN.

To the Editor of THE LANCET.

SIR,—In view of Dr. R. D. Lawrence's interesting letter I am pleased to give to readers of THE LANCET a few more details of my recent work.

Commercial insulin seems to be composed of at least three substances—viz., the true pancreatic hormone A, the anti-insulin B, and co-insulin C. Of these substances A and B have been obtained in crystalline form, while the work on the substance C is only now nearing completion, and cannot be reported on at present.

Substance A, as Dr. Lawrence rightly states, acts on rabbits according to their fasting blood-sugar levels. It increases the blood-sugar generally in those with a low level and decreases it in those with a high level. In over 20 cases of diabetics, treated so far in Warsaw clinics and elsewhere, it could be ascertained that the substance A acts like the old insulin. It is too early, however, to state whether the new substance presents any disadvantage or advantage over insulin, but since it is free from the very toxic substances contained in commercial insulin the latter should be the case. In non-diabetics, on the contrary, the substance A causes either no change in the blood-sugar or appreciable increase. One exception was noted here; this was a case with normal blood-sugar level, but with sugar in the urine one week before injection of substance A. This interesting result suggests, perhaps, that the substance A might be used with success for diagnostic purposes, like the known sugar tolerance-test, but it might be of more value to the physician than the latter.

One word more on the puzzling behaviour of substance A in diabetics and non-diabetics. My present explanation is that in non-diabetics there is lack of substance C (co-insulin), without which, perhaps, the substance A cannot act, or a superfluity of substance B (anti-insulin). In diabetics, on the contrary, there is too much of B (anti-insulin) and sufficiency of C (co-insulin). I am conscious, however, that this interpretation may have to be modified. Similar explanation can be put forward in Dr. Lawrence's interesting results (using ordinary insulin) on the blood-sugar increases in normal rabbits (which, personally, I never encountered with good insulin). In such cases the effect of insulin might depend on the ratio of substances A, B, and C in the preparation used, and on the equilibrium of these three substances in the animal itself.

I should like to take this opportunity to offer, for purpose of investigation, small quantities of my crystalline substance A to the clinics in Great Britain.

I am, Sir, yours faithfully,

CASIMIR FUNK.

The Biochemical Department, State School of Hygiene, Chocimska 24, Warsaw, Poland, Dec. 4th, 1926.

THE SUPPLY OF ARTIFICIAL LIMBS.

To the Editor of THE LANCET.

SIR,—We agree with the opinion expressed by Mr. Muirhead Little in your issue of Dec. 4th as to the importance attaching to the inspection of artificial limbs by a surgeon who has had experience in such work, and we noted with interest his suggestion to establish a small limb-fitting centre in Central London. At present it is the practice in hospitals for the surgeon to inspect the various limbs supplied, and it is of great assistance to the limb-maker that the surgeon who performed the operation and knows the case should consult with him as to its special needs. The inspection of finished limbs by the surgeon affords the limb-maker opportunity of demonstrating the construction of the particular limb, and of receiving from the surgeon suggestions dictated by his knowledge of the individual circumstances of the amputation. Our experience is that orthopædic surgeons are much more conversant with this subject now than in years gone by, and in cases supplied directly through hospitals or charitable institutions retaining the services of orthopædic surgeons there is little danger of unsuitable limbs being supplied. It would, however, undoubtedly be a boon to other civilian amputees if some plan existed by which the patient could enjoy the combined skill of surgeon and limb-maker, although we doubt whether the number of cases would warrant the establishment of a fitting centre. At the Queen Mary's Convalescent Auxiliary Hospital, Roehampton, the fitting is restricted to one or two firms, and the patient does not have a perfectly free choice of artificial limb. At Roehampton it is not possible to secure the services of surgeons who are free from the restrictions of Government contracts.

We are, Sir, yours faithfully,

W. R. GROSSMITH, LTD.

12, Burleigh-street, Strand, W.C., Dec. 6th, 1926.

CYCLIC VOMITING.

To the Editor of THE LANCET.

SIR,—In your issue of Dec. 4th appears an annotation under this heading, in which, after some introductory remarks—not, I think, representing current pediatric opinion very accurately—we are introduced to the views of an American radiographer who has found in children suffering from this disorder a high proportion of "ptosed stomach" and of "elongated colon." Perhaps a more suitable text for commentary might have been found in the valuable paper by Graham and Brown in the current number of the *Archives of Disease in Childhood*, in which references will be found to much of the recent work on ketonæmia, ketonuria, and ketogenesis—work which has shed a flood of light on the whole question, and to which no reference is made in your article.

All children—and quick, eager, excitable children, with a high metabolic rate, more than others—respond to certain forms of stress, to infection, to starvation, to great exertion, to excitement, to anæsthesia, and to a diet with a high proportion of fat and a low proportion of carbohydrate, by the development of ketonæmia, with diminution in the alkaline reserve of the blood, and a transitory fall in the blood-sugar. In practice it is apparent that these are precisely the factors which determine an attack of so-called cyclical vomiting in susceptible children. Especially the factor of infection is of importance. The ordinary cold running through a nursery will determine a simple rhinitis in the rest of the children, in the child so pre-disposed the underlying infection will be obscured by a typical "sick attack." Yet it may be that a precisely similar disturbance is produced by the stress of an examination or by a long railway journey.

In the administration of glucose, with or without insulin, we have in our hands a treatment which is on the whole strikingly effective. In prophylaxis some consideration, and it may be some modification, of the balance of fat and carbohydrate in the diet is very necessary, although not more necessary than the extirpation of any source of recurrent infection, whether, very rarely, in the appendix, or, very often, in the tonsils. The response of different children to comparable infections is very various, and the metabolic component of the disturbance, and the infective component, are often inextricably intertwined.

Recent studies in metabolism have shown that the normal child possesses the power of drawing largely upon its own carbohydrate reserves to complete the oxidation of the fat in its diet, thus metabolising a mixture very different from that ingested; and it would seem that in the child with cyclical vomiting this power is less evident. The tendency to "cyclical vomiting" is to be explained by some fault in carbohydrate metabolism, although we are still ignorant of the precise nature of that fault. I think we may take it that the length of the colon is of less significance.

I am, Sir, yours faithfully,

H. CHARLES CAMERON.

Devonshire-place, W., Dec. 6th, 1926.

RESEARCH AND MEDIOCRITY.

To the Editor of THE LANCET.

SIR,—In your excellent account (THE LANCET, Nov. 27th, p. 1113) of the Society of Medical Officers of Health meeting to discuss research work in preventive medicine I am reported as saying: "The man who depended on research for his initiative was not likely to achieve more than mediocrity." My actual words were: "Unless a worker has initiative of his own, and thinks for himself, I doubt the value of his work. Anyone dependent on advice for his actions will never achieve anything beyond mediocrity."

I am, Sir, yours faithfully,

Paignton, Dec. 4th, 1926. E. WARD.

Medical News.

UNIVERSITY OF LONDON.—Prof. H. R. Kenwood Sir William Simpson, and Sir Holburt Waring have been nominated Governors of the London School of Hygiene and Tropical Medicine.

UNIVERSITY OF DUBLIN, SCHOOL OF PHYSIC, TRINITY COLLEGE.—At recent examinations the following candidates were successful:—

FINAL MEDICAL EXAMINATION.

Part II., Medicine.—Edward G. Montgomery, Margaret H. Donaldson, Edmund P. N. M. Early, John C. T. Sanctuary, Menzies L. M'Cauley, Silver M. E. Deane-Oliver, John B. Patrick, Desmond Blewitt, Rachel E. Porter, James J. FitzGerald, Robert Kahn, Solomon Gurevich, John O. Bennett, Henry A. Ferguson, Robert A. J. Holmes-Ievers, John Quigley, Geoffrey D. Edwards, Charles F. M. Wilson, Myer Hoffman and Kathleen R. Byrne.

Surgery.—Victor St. G. Vaughan, Lionel B. Somerville-Large, Edward H. Harte, Victor G. Horan, Arthur J. Conlin, Stella C. Ross, Annette K. Wood-Martin, Edmund P. N. M. Early, Edward W. Bingham, Edward G. Montgomery, Arthur N. B. Odbert, Norah M. Smith, Arthur R. Gray, Andrew E. A. O'Byrne, John B. Patrick, Daniel A. O'C. Quinlan, Edward A. Ellis, Rachel E. Porter, Wilhelm F. Knobel, Gladys L. Craig, John Johnston, John J. O'Dwyer and Charles F. M. Wilson.

Midwifery.—Wilfred F. Lane, Lenox R. S. MacFarlane, Robert S. F. Hennessey, Thomas C. M. Corbet, Shirley D. K. Roberts, Wilfreda D. C. T. Pigott, Gilbert M. Smith, Isidore Isaacson, Patrick Brangan, George H. Henry, John H. Stephens, Maurice F. N. Griffin, Charles L. Day, Christina M'Donald, Ethel M. Weir, Louis R. Brumberg, Hubert C. Weir, George M'Donald, Samuel R. Elmes, Daniel M. Briuk, Albert Sachs, Thomas J. O'Reilly, John O. Bennett, Andrew C. C. Charles, Samuel B. Dalrymple, Norah W. Brown and Cecil F. Cope.

Master in Obstetric Science.—Frederik W. Pienaar.

BOARD OF CONTROL.—The address of The Board of Control (Lunacy and Mental Deficiency) England and Wales has now been changed to Caxton House West, Tothill-street, Westminster, S.W.1. The telephone number is Victoria 8540.

THE Eighth Edition of Treves's "Surgical Applied Anatomy," revised and enlarged by Prof. C. C. Choyce, is announced for early publication by Cassell and Co. Ltd. It includes a number of new illustrations.

ROYAL INSTITUTE OF PUBLIC HEALTH.—The next congress of the Institute will be held at Ghent, in Belgium, during Whitsuntide (June 1st–6th), 1927. Delegates have been invited from the governments, municipalities and universities of Belgium, France, Italy, the United States of America, and other countries. The five sections will be devoted to: State Medicine and Municipal Hygiene; Naval, Military, Air, and Tropical Diseases; Industrial Hygiene; Pathology, Bacteriology, and Biochemistry; and Women and the Public Health. Special arrangements have been made for travelling. Full particulars may be had from the hon. secretaries of the Congress at 37, Russell-square, London, W.C. 1.

THE LATE DR. A. H. BUTCHER.—Dr. Arthur Herbert Butcher, who died suddenly on Nov. 25th, at the age of 71, had practised in Birkenhead for nearly 40 years. Born at Ripon, he was the eldest son of the late Major-General Arthur Butcher, and was educated at the Royal Naval School, New Cross, London, at Queen's College, Cork, and at University College, Liverpool. He took the Scottish triple diploma in 1889. For 15 years he was consulting surgeon to the Birkenhead Borough Hospital, and he was the inventor of a number of devices used in surgical practice. During the late war he served for three years with a captain's commission in the Royal Army Medical Corps, and worked under the Ministry of Pensions. Dr. Butcher leaves a widow and daughters.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART. Arrangements have been made for the practice of the hospital to be open to undergraduates from Jan. 1st. One guinea will be charged for a one month's ticket, 2½ guineas for a three months' ticket. These fees are half those charged to graduates.

ROYAL INSTITUTION.—A general meeting was held on Dec. 6th, Sir Arthur Keith, F.R.S., Treasurer and Vice-President, in the chair. The Chairman announced that Prof. Julian Huxley had been elected Fullerian Professor of Physiology.—On Thursday, Dec. 16th, at 5.15 P.M., the Editor of THE LANCET will lecture on Medical Literature in Relation to Journalism.—On Tuesday, Dec. 28th, at 3 P.M., Prof. A. V. Hill will begin the Christmas course of juvenile lectures on Nerves and Muscles. Details of this course were given last week (THE LANCET, Dec. 4th, p. 1194).

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.—The annual dinner of the School and Hospital was held on Thursday, Dec. 2nd, at the Savoy Hotel, London, Lady Barrett, the Dean, presiding over a large number of doctors connected with the institution, their friends, the students and representative guests.

Sir John Rose Bradford, in proposing "Prosperity to the School and Hospital," regarded them as indivisible, and testified to the spirit prevailing at the Royal Free and all other hospitals with teaching schools attached, as something indefinable, a something existent in public schools and university colleges and found nowhere else. With regard to the voluntary system, on which the Royal Free and the other like charitable institutions of the country depended, he said that the serious threat to this system, following upon the pecuniary conditions produced by the war, had largely disappeared, leaving the system more stable than ever, based alike upon the generosity of the public and upon the freehanded service given by medical staff and lay authorities—in which connexion he referred warmly to the devoted work of Lord Riddell, the present Chairman. A school like that connected with the Royal Free, he said, having a creditable past and a promising future, was sure to progress, while he hoped that every opportunity for scientific research would be taken, because that was the surest way to march forward. He coupled the toast with the name of the Chairman, and reminded his audience how onerous the duties of the Dean of a medical school were when faithfully discharged.

Lady Barrett, in reply, made reference to the recent death of Dame Louisa Aldrich-Blake, the late Dean of the school, and expressed the regrets of all concerned with the hospital and school at the retirement of Dr. William Branson. She testified warmly to the services of Prof. Lucas Keene, the Sub-Dean, to whom, she added, the organisation of the dinner was due, and then spoke of recent devleopments in the institution, such as the forthcoming orthopædic department, the new children's wards, soon to be opened by Her Majesty the Queen, and the acquisition of a sports ground. Lady Barrett concluded by alluding with satisfaction to the fact that more of the students of the London School of Medicine for Women were entering general practice, perhaps as a result of the bar to marriage found in some of the public services. To-day, as general practitioners, she said, they would find opportunities for a full and useful life; they could teach preventive hygiene through the best of all mediums—the management of the home; while opportunities were now afforded for post-graduate education, and cottage hospitals were springing up to assist in clinical practice.

The toast of The Guests was proposed in a witty manner by Mr. Ulysses Williams, and replied to by Mr. T. F. Sibly, D.Sc., the new Principal Officer of the University of London, and Miss E. C. Lodge.

Dr. Sibly spoke of the great responsibilities which he had undertaken in connexion with so immense a University at a time when new efforts to organise and correlate its activities were finding expression in a Bill that showed every sign of being passed. He signified his gratitude for the manner in which he had been received at the various schools of the University which he had visited, and, referring to post-graduate education, he thought, that in spite of the work now being done, there was room for great developments.

Miss Lodge, speaking as an historian, said that a new connexion between the study of history and that of medicine had lately been brought home to her by the widely held view that medical conditions must have largely influenced both the character and behaviour of historical protagonists, and the health conditions in which the work of the world had to be done. She viewed with apprehension the necessity of learning medicine when no longer of student age, and considerably amused the company by detailing some monstrous mediæval receipts as constituting examples of medical history.

The health of the Chairman was proposed by Dr. Mary Blair, who spoke eloquently of the reliance which all her juniors placed upon Lady Barrett's scientific skill and uniform kindness. The evening closed with dancing.

QUEEN'S HOSPITAL FOR CHILDREN.—In his speech at last week's dinner of the Queen's Hospital for Children, Hackney-road, the Duke of York, who presided, stated that the two largest wards, containing 62 beds, would have to be closed at the end of the year unless a large sum were raised at once. Towards the £20,000 asked for, about £7000 had been obtained.

RADIUM FOR ADDENBROOKE'S HOSPITAL CAMBRIDGE.—A report from the medical staff emphasises the urgent need for a supply of radium. The minimum quantity necessary to make a start in treatment is 62 milligrams, which, at £11 10s. per milligram, comes to £713, and the cost of screens and other appliances would bring the total up to £943.

INTERNATIONAL MEETING AT FRANZENSBAD.—Following the precedent of last year, an international meeting of medical practitioners interested in cardiology and gynæcology will be held at Franzensbad from May 22nd to 26th next. Addresses on the present state of these branches of science will be given by well-known medical men.

THE SCHWEIZERISCHE MEDIZINISCHE WOCHENSCHRIFT.—Dr. Eugen Bircher, of Aarau, has been appointed co-editor with Prof. Alfred Gigon, of Basle, of this publication, in succession to the late Dr. Max Fingerhuth, of Zurich. Dr. Bircher is chief surgeon at the Aarau Cantonal Hospital, and is well known in Switzerland as an original writer on medical and medico-political matters.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.—On Nov. 27th (THE LANCET, p. 1139) we published a statement received from the secretary of the College, announcing that the Alvarenga Prize for 1926 had been awarded to Dr. P. S. Pelonze and Dr. F. S. Schofield for an essay entitled The Gamophage. We have since been informed that the title of the essay was The Gonophage.

DAVID LEWIS EPILEPTIC COLONY.—At the annual meeting of the David Lewis Manchester Epileptic Colony at Warford, Cheshire, it was stated that the daily average of colonists in residence was 373, and that there is a long waiting list. The 82 beds placed at the disposal of the Ministry of Pensions for ex-service men remains in full occupation.

HASTINGS DISPENSARY.—After redecoration and improvement, including the addition of a small operating department, the Hastings Dispensary, situated in the old part of the borough, has been reopened. It was established 95 years ago, and it is doing valuable work among the poor; it has been the means of relieving the Royal East Sussex Hospital to a considerable extent, and there is hope that it may soon be converted into a cottage hospital.

HARVEIAN SOCIETY OF LONDON.—The Buckston Browne Prize, consisting of a medal and the sum of £100, will be awarded for an essay on The Pathology, Diagnosis, and Treatment of New Growths Originating in the Walls of the Urinary Bladder. The prize is open to any member of the medical profession, under 45 years of age, who is registered in the British Isles or Dominions. Essays must be sent in by Nov. 1st, 1927. Further particulars may be had from the Hon. Treasurer, Dr. G. de Bec Turtle, 81, Cambridge-terrace, Hyde Park, W.2.

MAUDSLEY HOSPITAL.—The syllabus of lectures and practical courses for the Diploma of Psychological Medicine may now be had from the Director of the Central Pathological Laboratory, Maudsley Hospital, Denmark Hill, London, S.E.5. The first part of the course will begin on Jan. 4th, and includes lectures and demonstrations by Dr. F. Golla, Mr. S. A. Mann, Mr. Charles Geary, Dr. C. da Fano, and Dr. Henry Devine. The second part will follow in March, and the lecturers will include Dr. Bernard Hart, Dr. Edward Mapother, Dr. Golla, Dr. C. H. Bond, Dr. F. C. Shrubsall, Dr. Norwood East, Dr. A. W. Petrie, Dr. F. M. Walshe, and Mr. Foster Moore.

THE LATE DR. ALEXANDER HAMILTON.—Dr. Hamilton, who died at Edinburgh on Nov. 20th, came of a medical family and was born in Falkirk, where his father practised for many years. One of his brothers was the late Prof. David Hamilton, the first Erasmus Wilson professor of pathology in the University of Aberdeen. After studying at the Extra-mural Medical School at Edinburgh, Dr. Hamilton qualified in 1865. He went to Ashton-under-Lyne, Lancashire, as house surgeon at the District Infirmary in 1866 and was connected with the institution—as house surgeon, honorary surgeon, vice-President, and chairman of the medical board, and consulting surgeon—for 60 years. In Ashton-under-Lyne he had a large practice and for many years was certifying surgeon for Ashton and Hurst under the Factories and Workshops Acts. He retired from practice in 1915. Dr. Hamilton was a good violinist and an enthusiastic photographer. He celebrated his golden wedding in 1922.

A MEETING will be held at the residence of the Mayor of Lambeth, 193, Clapham-road, London, S.W., at 4 P.M. on Dec. 16th, when Dr. Camac Wilkinson will give an address on Tuberculin in the Diagnosis and Treatment of Tuberculosis.

A MANCHESTER WAITING LIST.—The Manchester Infirmary waiting list now reaches nearly 2000, mostly operation cases. It is impossible to take more patients until the nursing staff is increased, which cannot be until a new nurses' home is provided. The appeal for £150,000 to build such a home to accommodate 200 nurses, which was made a year ago, has produced little more than one-third of the sum needed, and the staffs in Manchester offices are being asked to contribute a penny a week per head towards providing the money.

ROYAL SUSSEX COUNTY HOSPITAL.—So many cases are now passing through the casualty department of this hospital, the great majority arising from the increasing motor traffic, that a house surgeon is to be appointed to have charge of the casualty department. At present there are three house surgeons and one house physician on the resident staff. In the 12 months ended Nov. 30th, 1925, the casualty department cases numbered 5612; in the 12 months ended Nov. 30th, 1926, the figure had reached a total of 7386.

UNIVERSITY OF LIVERPOOL.—Dr. W. S. Patton has been appointed to the Dutton Memorial Chair of Entomology. A medical graduate of the University of Edinburgh, he joined the Indian Medical Service in 1902, and retired with the rank of major in 1921. During the war Dr. Patton was entomologist to the Mesopotamian Expeditionary Force. He has acted as Director of the King's Institute of Preventive Medicine, Madras, and as Director of the Pasteur Institute of Southern India. Recently he has been engaged in entomological research in China, and has had charge of the Kala Azar Commission of the Royal Society.

VOLUNTARY HOSPITAL SYSTEM.—Speaking last week at a dinner given in support of the appeal for £25,000 for the extension of the London Jewish Hospital at Stepney Green, towards which £21,000 has now been raised, Sir Berkeley Moynihan said that the voluntary hospital system had never had its chance, and that if it perished it would be because of the lack of adequate organisation. The present situation was deplorable, and the 12,000 additional beds which were officially said to be needed might be multiplied by at least three if the inaugural symptoms of disease were to be dealt with adequately.

MEDICAL INSPECTION OF SCHOOL CHILDREN IN DUBLIN.—Little attempt has been made in any part of Ireland, writes our Irish correspondent, to carry into effect the provisions of the Medical Inspection of School Children Act of 1919, although these provisions were compulsory. As far as the area of the Irish Free State is concerned, only in two areas, both urban, is there medical inspection. It is now announced that a system of inspection is about to be established in the city of Dublin. It is estimated that the scheme will cost about £6000, of which half will be borne by central funds and half by the rates. It is intended to appoint two whole-time medical officers, who will work under the control of the medical officer of health. Arrangements for treatment will be made with the city hospitals.

SMALL-POX IN DURBAN.—Up to Nov. 17th there had been 13 deaths from small-pox in the Durban epidemic. The deaths were chiefly those of Indians, and so far there had been no deaths amongst Europeans. Many thousands of people had been vaccinated in Durban, largely Indians and natives, and over 4000 people had been vaccinated in the neighbouring city of Pietermaritzburg. Two cases of small-pox are also reported from Johannesburg, and they are believed to have been contracted from the infection in Durban. The publicity Durban is getting over the outbreak is far from welcome in view of the coming Christmas carnival.

THE LATE DR. S. C. NOBLE.—Dr. Samuel Clarke Noble, the oldest medical practitioner in Westmorland, died on Dec. 3rd, at his residence in Stricklandgate, Kendal, in his ninetieth year. He was a student at Middlesex Hospital, and qualified M.R.C.S. and L.S.A. in 1859. A member of a family which had produced doctors for three generations, he had an extensive practice in Lakeland, journeying mostly on horseback. He retired about a quarter of a century ago. In 1914, although well on towards 80 years of age, he volunteered for service in the war, and worked many hours a day examining military recruits in Westmorland, refusing remuneration for his services. He was a justice of the peace and Deputy Lieutenant of the County of Westmorland and in his younger days surgeon to the Kendal Hospital and H.M. Prison, Kendal.

Parliamentary Intelligence.

HOUSE OF LORDS.

TUESDAY, DEC. 7TH.

Births and Deaths Registration Bill.

THE Births and Deaths Registration Bill was read a second time.

HOUSE OF COMMONS.

WEDNESDAY, DEC. 1ST.

Street Collections for London Hospitals.

Sir ROBERT GOWER asked the Home Secretary whether he was aware that the operation of the regulations regarding street collections in the London Metropolitan area made by him on Oct. 1st last was such as to rescind the power possessed by the Commissioner of Police to grant permits for collections made on behalf of London hospitals and other charities by friendly society organisations in connexion with Sunday processions; and whether, having regard to the circumstance that such collections had been made for many years without inconvenience to the public and had resulted in considerable sums being raised for London hospitals, he would consider the desirability of amending such regulations to enable the Commissioner of Police to grant permits in such cases and subject to such conditions as he might think proper.—Captain HACKING replied: Before 1920 collections accompanying moving processions were entirely prohibited. In 1920 the Regulations were amended so as to allow collecting processions in special cases, but experience has shown that these processions are liable to cause so much disturbance and interference with traffic that it was decided to amend the street collection Regulations so as to prohibit the practice. My right hon. friend is sorry to have to put any obstacle in the way of collections for good objects, but the London traffic problem is now such that other considerations must be subordinated to traffic considerations.

Mosquito Pest at Singapore.

Mr. HORE-BELISHA asked the First Lord of the Admiralty what special work had been undertaken, and with what cost, towards mitigating the mosquito pest which had impeded the work at Singapore.—Mr. DAVIDSON (Parliamentary Secretary to the Admiralty) replied: The hon. Member is mistaken in supposing that the work has been impeded, since adequate steps were taken at the outset to prevent malaria by surface drainage and clearing. So far about £12,000 has been spent on these operations.

THURSDAY, DEC. 2ND.

University College Laboratory.

Captain ARTHUR EVANS asked the Secretary of State for the Home Department on what dates during the last five years the University College laboratory was inspected; and on how many of these occasions inspection was without notice; whether there were only two inspectors for the whole of Great Britain; and if he did not think that the inspection which it was desirable to have under this Act should be increased.

Sir W. JOYNSON-HICKS replied: There is a very strong tendency against such increases. The fact that this laboratory was visited 35 times in the last 18 months and 30 times without notice shows that the inspectors are doing their work very well.

Resignation of Chief Factories Medical Officer.

Mr. RHYS DAVIES asked the Home Secretary the reason why the chief medical officer of the factories department of the Home Office had resigned his post.—Sir W. JOYNSON-HICKS replied: The senior medical inspector of factories, having reached the pensionable age, applied to be allowed to retire, giving as his reason that he did not wish to be concerned in the administration of the Lead Paint (Protection against Poisoning) Bill; and I acceded to his application.

Mr. DAVIES: Is it not a fact that the pensionable age has nothing whatever to do with this resignation, and that it concerns mostly the point that this officer was at Geneva when this Convention was adopted, and that he feels now that, having negotiated the Convention, his honour is in question?

Sir W. JOYNSON-HICKS: I do not know about his honour. He had reached pensionable age. He retired because he did not agree with the views which I and His Majesty's Government have taken with regard to this matter.

Mr. DAVIES: Is it not true to say that this gentleman could have served the Home Office for one or two more years within the pensions scheme, but that he resigned as a protest against the action of the Government in regard to white lead poisoning?

Sir W. JOYNSON-HICKS: Certainly. I am expressing no opinion on the resignation. Possibly he could have served one or two more years, but he is quite entitled, if he so desires, to resign his position, which he has done.

Complaints against Panel Practitioners.

Mr. DAY asked the Minister of Health whether, in view of the number of complaints received from the contributors under the National Health Insurance Acts, he would consider an inquiry regarding the medical attention afforded panel patients.—Mr. NEVILLE CHAMBERLAIN replied: The efficiency of the medical service under the National Health Insurance Acts was exhaustively investigated by the Royal Commission, whose report, published early this year, contains a very favourable verdict. Comparatively few specific complaints are received by the Department, nor has anything come to my notice since the report which would justify the holding of any further inquiry.

Working-class Houses.

Mr. TREVELYAN THOMSON asked the Minister of Health the total number of working-class houses built since the Armistice; the number built under the various housing Acts; and the number in rural districts.—Mr. NEVILLE CHAMBERLAIN replied: It is estimated that 768,047 houses have been completed in England and Wales since the Armistice, 479,842 with State assistance under the housing Acts, and 288,205 without such assistance. Of the latter, 207,700 houses are of a rateable value not exceeding £26 in the provinces or £35 in the Metropolitan Police District. Approximately 209,500 houses have been erected in rural districts during the same period—117,000 under the housing Acts, and 92,500 without subsidy. Of the latter, some 79,200 are of a rateable value not exceeding £26 (£30 in the Metropolitan Police District).

Vacancy on the General Medical Council.

Viscount SANDON asked the Vice-Chamberlain of the Household, as representing the Lord President of the Council, whether the Lord President would select a non-professional member to fill the vacancy in the General Medical Council in January; and when his name would be announced.—Major HENNESSY replied: As I informed my noble friend in June last, it is not possible to say in advance what action the Lord President may see fit to take when the occasion arises for filling the vacancy now in question.

Viscount SANDON: Then I take it that there is no Parliamentary control in this matter at all.

No answer was given.

Reduction in Housing Subsidies.

On a motion by Mr. NEVILLE CHAMBERLAIN (Minister of Health) "That the draft of the Order proposed to be made by the Minister of Health and the Scottish Board of Health, with the approval of the Treasury under Section 5 of the Housing (Financial Provisions) Act, 1924 (presented Nov. 25th, 1926), be approved," Dr. HADEN GUEST said while there was a certain amount of theoretical justification at the present time for any effort to reduce national expenditure, the question was whether this proposal was either an economical or a proper way of doing so. He should like proof of the assertion of the Minister of Health that costs of building were likely to come down. But the real reason against reducing the subsidy was this. The subsidy was intended not to meet a normal condition of things, but a condition of things which 20 years before the war was already abnormal, and which during and since the war, with a slight amelioration lately, had grown steadily worse. They had not overtaken the arrears in normal housing. So far as he was aware they had not yet begun to touch the really serious slum question. How, then, was it possible to say that a subsidy which was imposed for dealing with an emergency should be removed before any reasonable being could assert that that emergency was abating? The reduction was altogether too general. Areas differed in the urgency of their demands. If the subsidy was to be reduced at all—and he did not admit that it was logical, desirable, or defensible to do so—then it should only be reduced in particular areas where it could be shown that the problem was being dealt with adequately. He would urge the Minister not to reduce the subsidy in rural areas. The Minister was very well informed as to what the housing conditions were by an army of medical men and public health officers all over the country, who sent him reports couched in language which if it were used by him (Dr. Haden Guest) would probably be stigmatised in the Press as Bolshevist propaganda. Let him refer in particular to the report of the medical officer of health for Birmingham. He had just been down in his own constituency (Southwark), and he had been besieged by people wanting rooms, and to know how they could get out of their overcrowded condi-

tions. He confessed that it was absolutely necessary to abstract oneself from the heart-rending vision of suffering and misery in order to be able to contemplate this problem cogently and clearly, but that did not excuse the Minister of Health for taking a course which was going to make it much more difficult, especially in the poorest and hardest-hit areas, to get houses erected and to get the slum problem dealt with. If the Government really meant business, instead of closing up on the subsidy they would have gone on with the present subsidy arrangements and added to them a big programme of slum clearance.

Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) said the present Government was as anxious as any government to avoid any break in the continuity of house production which was proceeding at an unexampled rate and had been exceeded by no other country in the world. Of the 750,000 new houses completed in this country since the war, nearly half had been completed during the last two years. They desired to exceed, if possible, that fine record. There was, indeed, every indication in the housing figures which were now presented to them that during the next 12 months they would do even better, and that the 200,000 mark would be passed. It was a modest step and a modest reduction which they were making, and it was in the right direction. The main object was to reduce the cost of housing, and it was a very well-advised step to begin to end the vicious and destructive system of subsidy, which was as bad for the building trade as for any other industry.

The resolution approving the draft of the Order was carried by 181 votes to 111.

MONDAY, DEC. 6TH.

Housing (Rural Workers) Bill.

The Housing (Rural Workers) Bill was considered on Report, and read a third time.

Infantile Paralysis in Rutland.

Colonel GRETTON asked the Minister of Health if there had been any further outbreaks of infantile paralysis in the county of Rutland; if so, what was the date of the latest recorded case; and if he could say the length of the period which his department considered should elapse before danger of infection or contagion ceased in ordinary cases of this disease.—Sir KINGSLEY WOOD replied: No further cases of this disease have been notified in Rutland since the occurrence of two cases at Uppingham School during the week ended Nov. 13th. As regards the last part of the question, in the present state of knowledge of this disease it is the practice of my right hon. friend's Department to recommend the isolation of patients who have been attacked by it for a period of six weeks from the date of onset of the disease.

Opium Restrictions in India.

Mr. CECIL WILSON asked the Secretary of State for the Colonies whether, as a result of the Government of India's decision to reduce by 10 per cent. per annum the export of opium except for medical and scientific purposes, the imports into British dependencies in the Far East would be proportionately reduced; and whether he could give an assurance that opium for purposes of smoking would not be imported from other sources to compensate for the reduction in the imports from India.—Mr. AMERY replied: No, sir. No such reduction would in my opinion be practicable in present circumstances.

Vivisection in London Physiological Schools.

Sir ROBERT GOWER asked the Home Secretary the number of dogs which had been used for vivisectional experiments at physiological schools in the London Metropolitan area during the past 12 months.—Capt. HACKING replied: Since Jan. 1st of this year 823 dogs have been used for experimental purposes in premises within the London area which are registered under the Act. All but a very few of the animals were kept under complete anæsthesia during the whole of the time of the experiment, and were destroyed before recovering from the anæsthesia.

Sickness and Disablement Benefit in 1925.

Mr. DAVID GRENFELL asked the Minister of Health how many working days were lost through illness by contributors towards the national health insurance schemes, with the total amount of benefit paid in the year 1925.—Mr. NEVILLE CHAMBERLAIN replied: The total amount of sickness and disablement benefit paid in the year 1925 to contributors to the National Health Insurance schemes in England and Wales during periods of illness which rendered the contributors incapable of work, was approximately £13,849,000. Exact particulars are not available as to the number of working days for which sickness and disablement benefit were paid, but it is estimated that the total number of weeks of sickness represented by the above payment is upwards of 25,000,000. In making this estimate, account has to be taken of a number of uncertain factors, and the result can only be regarded as a rough approximation.

Medical and Surgical Treatment in Poor-law Institutions.

Major TASKER asked the Minister of Health whether he was aware that boards of guardians were advised that they had no power under the existing law to refuse the admission to Poor-law institutions for the purpose of medical or surgical treatment of persons who could afford to pay for the necessary treatment; and whether he would introduce legislation giving boards of guardians convenient powers to take, where necessary, legal steps to recover from the estates of the patients the whole or a suitable proportion of the cost of their treatment and maintenance both in cases in which the patient was in receipt of an old age pension or of sickness or disablement benefit under the National Health Insurance Acts and in cases in which the patient was not in receipt of any such moneys.—Mr. NEVILLE CHAMBERLAIN replied: It is the duty of a principal officer of a Poor-law institution to admit an applicant, without any order for relief, in any case of sudden or urgent necessity, but the guardians have powers in certain circumstances to recover the cost of relief. As regards health insurance benefits, it is an essential feature of the National Health Insurance Act, embodied in the original scheme of 1911, and repeated in subsequent enactments, that money payable by way of benefit shall not be diverted to Poor-law authorities or otherwise used to relieve local rates. The intention of the Act is that sickness benefit should primarily be devoted to the necessities of the individual and his family, and benefit is not assignable. As regards old age pensions, the relevant part of the Contributory Pensions Act re-enacts Section 3 (1) of the Old Age Pensions Act, 1919, which provides that a person shall be disqualified for receiving or continuing to receive a pension while he is an inmate of any workhouse or Poor-law institution—with a saving proviso which raises the disqualification for three months where recourse is had to a Poor-law institution only for the purpose of surgical or medical treatment. A suggestion that inmates of Poor-law institutions should not, as such, be disqualified for receiving old age pensions but that the pensions should be appropriated by the guardians was considered, but rejected by the Departmental Committee on whose recommendation Section 3 (1) of the Act of 1919 was based.

Public Health (Smoke Abatement) Bill.

This Bill was considered on Report, and an amendment to bring the chimneys of domestic dwelling-houses in London within its scope was negatived. Sir A. HOLBROOK moved to include private dwelling-houses in the clause which gives urban authorities power to require in new buildings the provision of such arrangements for heating and cooking as are calculated to prevent or reduce emission of smoke. —Mr. NEVILLE CHAMBERLAIN (Minister of Health) said that only a trifling number of houses could be affected by the amendment; he was not prepared to deny to house-holders the use of the open fire until there was a reasonably cheap and satisfactory alternative.—The amendment was rejected by a majority of 138. The operation of the Bill was postponed from Jan. 1st to July 1st.

TUESDAY, DEC. 7TH.

Saltash Pensions Hospital.

Mr. BRIANT asked the Minister of Pensions how many patients at the Saltash Pensions Hospital had discharged themselves during the last 12 months; and if he had made inquiry into the food and general condition of that institution. —Lieut.-Colonel STANLEY (Parliamentary Secretary to the Ministry of Pensions) replied: During the period referred to 63 men discharged themselves against medical advice from Saltash, after an average period of stay in the institution of close upon six months. I understand that while in several of these cases the men must be regarded as practically irresponsible for their actions, most of the men discharged themselves for domestic reasons. The hospital is regularly visited by medical inspectors of the Ministry, and my right hon. friend is satisfied that the feeding and general arrangements are satisfactory.

Specialist Medical Service for Insured Persons.

Mr. HORE-BELISHA asked the Minister of Health when it was proposed to put into operation the recommendation recently made by the Royal Commission on National Health Insurance that the scope of the benefit should be extended to include a consultant and specialist medical service and that the necessary funds for that purpose should be obtained by a partial pooling of future surpluses of approved societies. —Major HENNESSY replied: My right hon. friend is not at present in a position to say what action will be taken with regard to the recommendation to which the hon. Member refers.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
MONDAY, Dec. 13th.—5.30 P.M., WAR. Cinematograph Demonstration: Lieut.-Colonel E. M. Cowell: Thomas's Splint Drill. Paper: Surgeon-Comdr. H. E. R. Stephens, R.N.: Abdominal Hernia in the Royal Navy.
TUESDAY.—5.30 P.M., GENERAL MEETING OF FELLOWS and Ballot for the Election to the Fellowship. 5 P.M., THERAPEUTICS AND PHARMACOLOGY. Papers: Dr. Curtis and Dr. Sampson Wright: On the Action of Lobeline. Dr. R. Hilton: On a Comparison of Some Methods of Administration of Oxygen. 8.30 P.M., PSYCHIATRY. Presidential Address: Dr. W. Aldren Turner: Some Observations Upon Epilepsy.
WEDNESDAY.—5 P.M., HISTORY OF MEDICINE. Papers: Dr. A. Davies: A Montpellier Diploma. Mr. C. J. S. Thompson: A Historic Case of Surgical Instruments. (The case of instruments presented to the Royal College of Physicians in 1652 will be exhibited by kind permission of the President and Council of the College.) Prof. Siddigi (Madras): Medical Case-notes from Arabic Literature (communicated by Dr. Singer). Dr. Charles Singer: An Example of the Egyptian God Bes exhibiting Symptoms of Spina Bifida.
THURSDAY.—5 P.M., DERMATOLOGY. (Cases at 4 P.M.) Cases: Dr. Parkes Weber: (1) Very Severe Prurigo of Besnier in an Adult. Dr. E. G. Ffrench: (2) Lupus Erythematosus Affecting Fingers Only; (3) Lupus Verrucosus. Other cases will be shown.
FRIDAY.—8 P.M., ELECTRO-THERAPEUTICS and SURGERY. Attention is drawn to the alteration in the time of this meeting. Special Discussion on Diathermy. Speakers: Dr. E. P. Cumberbatch (for the Section of Electro-Therapeutics); Mr. F. J. Steward (for the Section of Surgery); Mr. Gwynne Williams and others will also take part in the discussion.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.
MONDAY, Dec. 13th.—8.30 P.M., Discussion on Recent Advances in the Ætiology, Diagnosis, Prophylaxis, and Treatment of the Exanthemata, to be introduced by Dr. J. D. Rolleston, followed by Dr. R. A. O'Brien.

ST. JOHN'S HOSPITAL DERMATOLOGICAL SOCIETY.
WEDNESDAY, Dec. 15th.—4.15 P.M., at St. John's Hospital, Leicester-square: Clinical cases will be shown and a paper will be read by Dr. P. J. Edmunds on Skin Affections following Vaccination.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.
WEDNESDAY, Dec. 15th.—1.45 P.M., Dr. Norman Mackeith: Examination of Accessory Sinuses.
FRIDAY.—1.45 P.M., Mr. J. D. McLaggan: Examination of the Nose. 4 P.M., Mr. Harold Kisch: The Operative Treatment of Nasal Sinus Suppuration.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, Dec. 13th, to SATURDAY, Dec. 18th.—FELLOWSHIP OF MEDICINE. Special Lecture at the Medical Society, 11, Chandos-street, Cavendish-square. Thurs., Dec. 16th, at 5 P.M., Mr. Ernest Clarke: Emergencies in Ophthalmic Practice. Free to all members of the medical profession.—INFANTS HOSPITAL, Vincent-square, S.W. Special Course on Diseases of Infants. Every afternoon from 2 P.M. Special Lectures and Demonstrations.—WEST END HOSPITAL FOR NERVOUS DISEASES, 73, Welbeck-street, W. Special Lecture-demonstrations upon Selected Cases at 5 P.M. Further information from the Secretary of the Fellowship of Medicine.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, Dec. 13th.—11 A.M., Mr. Tyrrell Gray: Surgical Wards. 12 noon, Mr. Simmonds: Demonstration of Fractures. 2 P.M., Dr. Trevor Davies: Gynæcological Department.
TUESDAY.—11 A.M., Mr. Endean: Venereal Disease Demonstration. 12 noon, Dr. Burrell: Chest Cases. 2 P.M., Mr. Sinclair: Surgical Out-patients.
WEDNESDAY.—10.30 A.M., Dr. Burnford: Medical Wards. 2 P.M., Dr. Owen: Medical Out-patients. 2 P.M., Mr. Tyrrell Gray: Operations.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Department. 2 P.M., Dr. Scott Pinchin: Medical Out-patients. 3.30 P.M., Sir Henry Simson: Gynæcological Wards.
FRIDAY.—10 A.M., Dr. Dowling: Skin Department. 11 A.M., Dr. Pritchard: Modern Methods in Medicine. 2 P.M., Mr. Addison: Operations.
SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy Department. 10 A.M., Mr. Banks-Davis: Operations on Throat, Nose, and Ear.
Daily, 10 A.M. to 5 P.M., Operations, Medical, Surgical, and Special Out-patient Departments. Saturdays, 10 A.M. to 1 P.M.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY, Dec. 13th.—10 A.M., Surgical Clinic. 2 P.M., Medical Cases in the Wards. 2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.
TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.
WEDNESDAY.—2.30 P.M. to 5 P.M., Medical, Skin, and Eye Clinics. Operations.
THURSDAY.—11.30 A.M., Dental Clinic. 2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose, and Throat Clinics. Operations.
FRIDAY.—10.30 A.M., Throat, Nose, and Ear Clinics. 2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.
On Tuesday, Dec. 14th, and Friday, Dec. 17th, at 2.30 P.M., there will be special demonstrations of Ear, Nose, and Throat Cases and Surgical Cases, by Mr. W. Ibbotson and Mr. E. Gillespie respectively.

THE LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Dec. 14th.—5 P.M., Dr. S. E. Dore: Erythemato-Squamous Eruptions.
THURSDAY.—6 P.M., Dr. J. T. Ingram: Pathology Demonstration.

POST-GRADUATE HOSTEL, Imperial Hotel, Russell-square, W.C.
TUESDAY, Dec. 14th.—9 P.M., Prof. C. A. Lovatt Evans: Capillary Circulation.
THURSDAY.—Mr. A. E. Mortimer Woolf: Pain.
FRIDAY.—Dr. T. Wilson Parry: The Differential Diagnosis of the Various Kinds of Holes Discovered in the Skulls of Prehistoric Man.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, Dec. 14th.—4.15 P.M., Mr. J. Howson Ray: Spinal Caries with Paraplegia.
FRIDAY.—4.15 P.M., Dr. E. F. Hill: Blood Changes During Anæsthesia.

ST. MARGARET'S HOSPITAL FOR WOMEN, Acomb-street, Whitworth Park, Manchester.
WEDNESDAY, Dec. 15th.—4.15 P.M., Mr. A. C. Magian: Ovarian Grafting for the Cure of Sterility.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.
FRIDAY, Dec. 17th.—3.30 P.M., at the Royal Infirmary: Mr. Finch: Strictures, Innocent and Malignant.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.
TUESDAY, Dec. 14th.—4 P.M., Prof. Murray Lyon: Methods of Influencing the Blood Pressure. Discussion to be opened by Dr. W. F. Mair.

CHADWICK PUBLIC LECTURES.
MONDAY, Dec. 13th.—8 P.M. (at the Royal Sanitary Institute, 90, Buckingham Palace-road), Mr. W. A. Robson, Ph.D.: Legal Conceptions of Public Health.

Appointments.

JEFFERSON, G., M.B., M.S. Lond., F.R.C.S., has been appointed to the newly-created post of Honorary Neurological Surgeon at the Royal Infirmary, Manchester.
MURCHISON, K. D., M.B., Ch.B. Glasg., Certifying Surgeon under the Factory and Workshop Acts for the Shaw District of the County of Lancaster.
SMITH, NORA F., M.B., B.S. Lond., D.P.H., to take charge of the Maternity and Child Welfare Department of the City of Manchester.
North Middlesex Hospital: RAMSAY, FREDA, M.D., B.S. Durh., D.P.H., D.O.M.S., Ophthalmic Surgeon: FIGDOR, P., M.B., Ch.B. Glasg., Medical Electrician and Actinotherapist.

Vacancies.

For further information refer to the advertisement columns.

All Saints' Hospital for Genito-Urinary Diseases, Vauxhall Bridge-road, S.W.—Res. Sen. H.S. Also Non.-Res. Jun. H.S. At rate of £200 and £100 respectively.
Bethnal Green Borough Council.—Consulting Obstetricians. £5 5*s.* per case.
Brighton, New Sussex Hospital for Women and Children.—Hon. Asst. P. Also Hon. Clin. Asst.
Brighton, Sussex, Maternity and Women's Hospital.—Second Hon. Obstet. Phys.
Cairo University.—Prof. of Pathology. £E.2000. Also Prof. of Bacteriology. £E.1500.
Cancer Hospital, Fulham-road, S.W.—Pathologist. £1000.
Capetown, City of—Med. Supt. of Hospitals. £800.
Cardiff City Mental Hospital, Whitchurch.—Res. Clin. Asst. 50 guineas for six months.
Dreadnought Hospital, Greenwich.—H.P. and H.S. Each at rate of £110.
East London Hospital for Children and Dispensary for Women, Shadwell, E.—H.S. At rate of £125.
Glasgow, Consumption Sanatoria of Scotland, Bridge of Weir.—Asst. Res. M.O. £200.

Hammersmith Infant Welfare Centre.—M.O.
Hampshire County Council.—Dental S. £500.
Hospital for Sick Children, Great Ormond-street, W.C.—Surg., Phys. to Out-patients. Anæsthetist. £15 15*s.*
Ipswich, East Suffolk and Ipswich Hospital.—H.S. and Cas. O. Each at rate of £100.
Lambeth Parish Hospital.—Two Jun. Asst. M.O.'s. £200 each.
Maidstone, Kent County Mental Hospital.—Asst. M.O. £300.
Maidstone, West Kent General Hospital.—H.S. £220.
Manchester, Ancoats Hospital.—H.S. At rate of £100.
Miller General Hospital for South-East London, Greenwich-road, S.E.—Res. Cas. O. £150. Also H.S. £125.
Newcastle-upon-Tyne, Princess Mary Maternity Hospital.—Asst. Res. M.O. At rate of £40.
Oldham Royal Infirmary.—H.S. At rate of £200.
Oxford, Radcliffe Infirmary and County Hospital.—H.S. and Obstet. H.P. Each at rate of £120.
Prince of Wales's General Hospital, Tottenham, N.—Hon. Asst. S., Physio-Therapeutist, and Hon Asst. P. or S. to X Ray Dept. Also H.S.
Rochdale Infirmary and Dispensary.—Jun. H.S. £200.
Royal Army Medical Corps.—Commissions.
Royal Free Hospital, Gray's Inn-road, W.C.—Orthopædic Surg.
Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—H.P. At rate of £100.
St. Mary's Hospital, Institute of Pathology and Research.—Research Studentship. At rate of £200.
St. Mary's Hospital, W.—Med. Registrar. £200.
St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—Clin. Assts.
Salford Royal Hospital.—Res. Surg. O. £200. Two H.S.'s, H.P., and Cas. H.S. Each at rate of £125.
Sheffield, Jessop Hospital for Women.—Asst. H.S. At rate of £100
Sheffield Royal Infirmary.—H.S. At rate of £80.
Stockport Infirmary.—H.S. £175.
Sutton, Surrey, Downs Hospital for Children.—Ass. M.O. £550.
Wrexham and East Denbighshire War Memorial Hospital.—Two Res. H.S.'s. Each at rate of £100.

The Chief Inspector of Factories announces vacant appointments for Certifying Factory Surgeons at Lymm (Cheshire) and Driffield (Yorks).

Births, Marriages, and Deaths.

MARRIAGES.

CORKHILL—JONES.—On Nov. 26th, at St. James's Church, Birkdale, Joseph G. G. Corkhill, M.D., to Julia F. Wheatley Jones, of Ellerslie, Birkdale.

MORGAN—MACDONALD.—On Dec. 1st, at the Marylebone Presbyterian Church, Oswald Gayer Morgan, M.Ch., F.R.C.S., to Jessie Campbell MacDonald, younger daughter of Colin MacDonald and Mrs. MacDonald, of Abbey-road, St. John's Wood, N.W.

DEATHS.

DATE.—On Dec. 4th, suddenly, Margaret, the beloved and loving wife of William Horton Date, of 3, Homefield-place, Exeter.

HEARNDEN.—On Dec. 2nd, suddenly, at Cavendish Lodge, Cavendish-road, Sutton, Surrey, Ernest Morgan Hearnden, M.R.C.S. Eng., L.R.C.P.

HYDE.—On Nov. 29th, suddenly, at Newport, Mon, John Wilkinson Davis Hyde, M.R.C.S., L.R.C.P., Tuberculosis Physician, Monmouthshire, under King Edward VII. Welsh National Memorial Association, aged 33.

WHITELAW.—On Dec. 4th, suddenly, at St. George's-road, Golders Green, Dr. William Whitelaw, aged 77.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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Notes, Comments, and Abstracts.

HOSPITALS IN NORTHERN AMERICA.

AN ADDRESS BEFORE THE ULSTER MEDICAL SOCIETY.

Prof. C. G. LOWRY read a paper entitled Notes on Hospitals and Hospital Administration in Canada and the United States at a meeting of the Ulster Medical Society held on Dec. 2nd with Dr. M. J. Nolan, the President, in the chair. After paying warm tribute to the kindness and hospitality he had everywhere received during a recent American visit, Prof. Lowry spoke of some differences in organisation and in technique between the trans-Atlantic hospitals and our own. He found in the entrance hall of many hospitals desks marked "Information" on one side and "Hostess" on the other side. At the former there was an official whose function it is to receive visitors to the hospital, to answer inquiries from friends of patients, and to direct visitors where certain people could be found. At the other desk an official interviews the friends of intending patients and deals with applicants for private accommodation in the hospital. The new hospitals in Canada and the States were constructed of four or five stories, and much use was made of electric lifts. In some cases the kitchen and stores were upon the fifth floor, each floor having a separate lift. Food distribution was effected by what might be called a "field kitchen," wheeled in turn to each patient's bed, and this plan seemed to work well, and to save labour to the nurses. Noise was mitigated by thick rubber flooring. No bells were allowed. In some hospitals each bed had a bell-push which, when pressed, sounds a faint buzzer at the desk of the nurse in charge, and at the same time a small numbered disc on her desk is illuminated, corresponding with the number of the bed. Much ingenuity was evident in labour-saving devices.

In the great majority of hospitals provision was made both for public and for paying patients; in some cases there was a special wing, in others a separate pavilion. The private pavilions had their own separate X ray installation, sometimes separate laboratories, and the operating theatres were on the most approved plan. The cost of private accommodation was high, and it was an index to the prosperity of the countries that the high figures were willingly paid. Substantial profits accrued from the pay wards. Prof. Lowry thought that if there were equal numbers of pay and public patients a hospital might be made almost self-supporting. The ratio of private to public patients was usually about 1 to 2. In some cases the municipality paid 6*s.* per diem for indigent patients. All patients contributed to the hospital.

In the modern maternity hospitals there were about five delivery rooms to every 100 patients, with two operating theatres. Some of these hospitals had well-isolated septic departments, a nursery for children of septic mothers, and an isolation nursery for babies suffering from any infection. Adjoining the delivery rooms accommodation was provided for the practitioner to rest if his case was delayed. In several hospitals a small single-bed ward connected with the main wards was used for a dying patient, thus saving much nervous strain to the other patients. Sitting-rooms for the relatives of patients were provided in some places.

Nursing Conditions.

Nursing is maintained at a high level, and the social status and educational equipment of the nurses are higher than at home. Many nurses are graduates in arts or science. The remuneration is good, ranging from about 26*s.* to 32*s.* per diem. The nurses' quarters are often admirable. The course of training is on much the same lines as at home. In many of the hospitals there is a "metabolic" kitchen, where diets for special cases, such as diabetics and nephritics, are specially prepared under a diet nurse. Some of these cases after convalescence are detained in hospital for several weeks and undergo a tuition course with lectures and demonstrations, preparatory to their discharge from hospital.

The arrangements for the welfare of babies in the maternity hospitals were good, one or two nurseries being available on each floor. At feeding time the babies were wheeled on trolleys to the wards and distributed to their mothers, and, when fed, were promptly wheeled back. Any mother suffering from a catarrhal affection had to wear a mask when nursing her child, and no visitors were allowed in the nurseries. In one maternity hospital each child had a separate bath, which was sterilised daily, a separate sterile towel, and a separate washcloth, and the nursery floor was washed daily with lysol soap. The identification of a baby was provided for by necklets of beads stamped with the letters of its name. Much importance was attached to the maintenance of an even temperature in the nurseries, since it was found that, if the temperature of the nursery fell 5° in 24 hours, the babies lost weight.

The regulations in regard to visitors both in maternity and in general hospitals were much more stringent than in the home countries. Children were not allowed to visit maternity hospitals under any circumstances. Even in the private pavilions only two visitors were allowed to a patient, and in the public wards of the maternity hospitals, as a rule, only one visitor was permitted. In one hospital patients who had undergone abdominal section were allowed no visitors until after the fourth day, except one relative for a few minutes.

As regards anæsthesia, the routine was gas and oxygen, followed by ether or ethylene gas. Chloroform was never employed. Radium was generally preferred to operation in primary carcinoma of the cervix uteri. The results were good. Protein injections were largely used in gynæcological infections. Blood transfusions were a routine measure in all poor operative risks. Blood pressure observations are more frequently studied than in some other countries. Rectal examinations with the gloved finger were the rule, vaginal examinations being reduced to a minimum.

The arrangements for teaching are good. In some cases accommodation with residence was provided for students in the hospitals. Medical schools limited the number of students according to their clinical material, and overcrowding was prohibited.

DANGERS OF THE BARBER'S CHAIR.

A RECENT essay by Dr. K. G. Colquhoun[1] on Some Dangers of the Barber's Chair, is worthy of the attention of all the barber's clients. It is not only in Australia that many hairdressers ply their trade to the danger of the public, and in London, at any rate, it is exceptional to find a shop where the arrangements are such that the well-informed can feel themselves fully guarded against infection. A great many hairdressing establishments would find no customers were it not that the population at large is not fastidious and busy people are almost compelled to use the services of those they find at hand.

It is in the public interest that barbers and their assistants should be compelled to study those diseases of the scalp, beard, and nails which experience has shown to be due to microbic infection. If the germs of a disease are present on the scalp or face the barber's implements are at least as effective as the platinum loop for their conveyance and inoculation on a fresh and hitherto uncontaminated medium—the next scalp or face that presents itself. Whether a disease is thereby immediately or remotely contracted depends on a number of chances which it is difficult to estimate. The success or otherwise of inoculation is governed by the degree of resistance (acquired or inherited) of the individual, by measures taken to cleanse the contaminated part, by the virulence of the infecting organism, and by many other factors as well. By no means every purposive and scientific inoculation succeeds, and those who escape an accidental infection are admittedly in the majority. It cannot be denied, however, that from time to time there are definite cases of specific infection in which the conveying agent must have been the barber's instrument. Of these infections three, in virtue of their highly characteristic clinical and microscopic appearances, are particularly worthy of mention: impetigo (due to a virulent streptococcus), seborrhœa capitis, and tinea in its various forms and situations.

Impetigo has a habit of occurring in local epidemics; one of these was a particularly obstinate outbreak of the disease last year in a London club, whose members had attended the same hairdresser. In this instance it was easy to trace the source of the infection and prevent fresh cases arising, but where the victims are not friends or acquaintances and are unaware of other cases, the difficulties of apportioning responsibility and eliminating the source of infection may well be insurmountable.

Seborrhœa of the scalp, being a condition in which the symptoms are chronic and not in the least dramatic, is apt for a long time to escape the observation of the untrained eye. It is known by various names—seborrhœa capitis (sicca or oleosa), pityriasis, dandruff, scurf, and in certain more acute phases, eczema of the scalp. Many dermatologists regard it as the most potent cause of baldness in the male. Whatever may be said for the pre-existence of a suitable nidus or terrain, it is the general opinion that the most important part in the production of this condition is played by micro-organisms, and if these premises are correct, a moment's reflection will convince all but the most sceptical that the promiscuous use of a hair brush must be a very potent source of seborrhœic infection, and should be scrupulously avoided.

The third and more demonstrable danger of the communal brush is ringworm of the hairy scalp. This danger, it is true, exists only for children under the age of 16, but is nevertheless, a very real one, especially in schools, and assuredly it explains the frequency with which batches or groups of cases are detected at the same time. It is more than probable that no ordinary means of disinfection would succeed in sterilising a brush that had once been used on a case of tinea tonsurans, for the resistance to all the usual disinfectants of the causal mycelium is notorious, even when it is lying outside the hair shaft.

It is probable that the above diseases are conveyed fairly frequently from head to head, and the possibility of this conveyance could very easily be reduced by (1) the client's insistence on the use of none but his own apparatus; (2) certain simple tonsorial regulations, possibly formulated and enforced by the public health authorities. It must not be forgotten that the shaving brush is also a potential danger although, theoretically at least, not to the same extent as the hair brush, because of its more frequent and more drastic contact with hot water and soap. Shaving brushes from certain countries have, of course, been the proven cause of occasional outbreaks of anthrax in England. Razors, owing to their conformation and structure, and to their being frequently dipped in hot water, are relatively harmless implements of infection, although the blunt and clumsily-handled variety can do a good deal to promote the local condition termed barbers' rash, or sycosis, by the production of minute abrasions of the skin surface. Combs and clippers, too, have been pilloried on occasions, and in some cases the use of clippers may be responsible for boils of the neck.

It is opportune, perhaps, to draw attention to the risks which may be run in ill-conducted manicure and chiropody parlours. Ringworm of the nails is rare, but cases have been traced to the use of a manicure set by several persons, whilst the possibility of conveying whitlow infections, and even syphilis, by manicure will be apparent to any medical reader.

Conditions of hairdressing have certainly improved during the past few years, and antiseptics are freely used, though not always intelligently; but there is much room for further observance of the detail of asepsis in these establishments in view of the great amount of harm which barbers may inflict on the community if they are uninstructed and uncontrolled.

[1] Health Bulletin No. 6 of the Department of Public Health of Victoria, Australia.

FARMING AND VITAMINS.

A PAPER by Colonel R. McCarrison (*Indian Jour. Med. Res.*, 1926, xiv., 351) shows that the manurial history of cultivated land may have an influence on the vitamin content of cereals grown on it. By appropriate feeding experiments on pigeons and rats he shows that millet grown on soil manured with farmyard manure yields a grain of higher nutritive value than when it is cultivated on the same soil manured with a complete mineral artificial manure; soil which has been continuously cropped for many years without being manured at all produced grain of very low nutritive value. The same differences between natural and artificial manures were found for wheat, though this grain had a fairly high value even when no manure had been used. Manuring, therefore, affects quality as well as quantity. No artificial manure has, we believe, been found which will over long periods give yields of wheat equal to those obtained with dung: quantitatively the empirical wisdom of pre-chemical farming is still justified, and these results suggest the possibility that the early agriculturists, growing cereals for their own as much as for other's use, had found its qualitative excellence too. In any case, it is clear that those whom lusty viscera enable to advocate wholemeal bread by personal example will have to consider the source of their grain: "dung-fed bread" may follow "grass-fed milk."

LIGHT AND TYPESETTING.

RECENT investigation into the adverse effect of artificial illumination, as compared with daylight, upon physical efficiency, has been confined to the textile industries. But in the printing trade work is largely done after daylight has failed, or in places where artificial light is needed during daylight hours, and exact information[1] as to the amount of illumination necessary for typesetting by hand is very welcome. Before this investigation was made no knowledge existed as to the loss of efficiency, both in quantity and quality of output, through work being carried on under insufficient light. The standard of output chosen for the test was that attained during a daylight illumination of not less than 50 ft.-candles and sometimes as high as 495, the mean being 160 ft.-candles. The sources of light throughout were so placed as to avoid glare. Gas-filled lamps were used, and care was taken to arrange their position and height so that the angle of "cut off" was greater than 30°. The compositors then worked under artificial light of varying power. With an illumination of

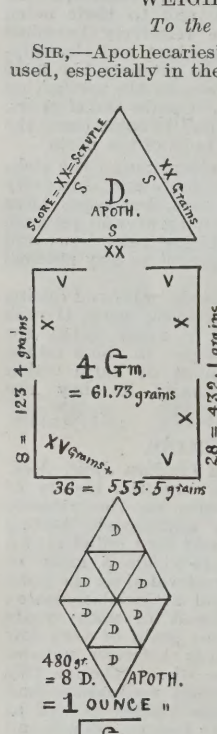
[1] The Relation between Illumination and Efficiency in Fine Work (Typesetting by Hand). Joint Report of Industrial Fatigue Research Board and Illumination Research Committee. Pp. 12. London: H.M. Stationery Office. 1926. 6*d*.

less than 2 ft.-candles (by no means an exaggerated dimness in ordinary factory life), a quarter of the possible output was lost, mistakes were doubled, and fatigue was materially increased. When the illumination reached 7 ft.-candles—a value higher than that of present general practice—over 10 per cent. of possible output was still lost, and a high percentage of errors occurred; but at this value no fatigue effect was manifest. This is an interesting point, for it suggests that the standard of conditions requisite for health may be considerably below what is economically advantageous from the viewpoint of production. Not until the artificial illumination was raised to about 20-ft. candles did the amount and quality of output reach that of the daylight standard. The provision of such higher degrees of illumination is largely a question of expense, which the results of this investigation show to be worthy of consideration.

WEIGHTS AND MEASURES.

To the Editor of THE LANCET.

SIR,—Apothecaries' weights and measures are still largely used, especially in the United States of America, for, as you said in a review of the "Dispensatory" (THE LANCET, Nov. 13th, p. 1015), practically all American prescriptions are written in this measure. Since the apothecaries' and the metric units are likely to be used side by side for some time, at any rate, some mnemonical aid to memory should be useful. The accompanying diagram may help to visualise the relationship between the two systems. "Drachm" and "gramme," being both of Greek etymology, are represented in the diagram by Greek letters, the triangle standing for delta, the square for four gammas. The D also stands for drachm and the G for gramme. The triangle is to be accepted as equal in value or area to the square, each side of the triangle as being a score of grains or one Scruple (Score and Scruple have the same initial letter), and each quarter of the square as a gamma or one gramme. The long arm of the gamma equals X grains and the short arm V, or XV together. The various relationships between drachm, gramme, and grains can then be seen at a glance or worked out on paper by the ordinary rules of arithmetic. The peculiar significance and sequence also of the additional figures supplied for grammes and grains—namely, 8, 28, and 36 equalling grains 123·4 and 432·1 and 555·5 will not be missed. When it is remembered, moreover, that an English sovereign weighs 123·274 grains and is obviously very near indeed to 8 grammes, or 2 drachms, then that weight can be at once visualised and the 28 grammes is only about 5½ grains under the weight of three pennies, which weigh one ounce avoirdupois (28·35 grammes). Again, as an example, half the triangle—that is, half a drachm (one of the series usually supplied by scale and weight manufacturers), is seen to be equal to half the square—that is, 2 grammes, or practically 30 grains. Apart from all the details, the fundamental thing is to visualise the delta triangle and the "square" of four gammas. The lozenge, or diamond, shows 8 drachms as equal to one ounce apoth. or troy, or 31·1 grammes.



I am, Sir, yours faithfully,

Dec. 1st, 1926. W.

PINK LUSTRE POTTERY.[1]

Dr. Atwood Thorne has written an interesting little monograph on the results of cultivating a taste for lustre earthenwares. He started his collection in pure chance by the purchase at King's Lynn of a teapot, with a cracked lid, "which reminded him of tea at his grandmother's house." It had upon it as decoration a cottage, trees, stables, a fence, and a conventional design of blobs, and he learned that his purchase was a specimen of a known class of pink lustre pottery which he calls the "cottage style." Complete sets he afterwards found difficult to pick up, but one of the excellent illustrations shows what should be looked for. The illustrations also show varieties of cup, saucer, basin, and jug, some of the last having upon them sporting scenes, while many of the receptacles for beer and cider bear elaborate floral or historic designs. Apparently a large number of the jugs and basins were manufactured for sailors, who affected them as presents to their sweethearts and wives, hence frequent embellishment with ships and compasses, and the many transfers to the pottery of sentimental verses. Dr. Thorne's book will be of use to those who have collected and may induce others to follow their example, when, however, they may not always meet such obliging purveyors as those whose assistance Dr. Thorne acknowledges handsomely.

[1] Pink Lustre Pottery. By Atwood Thorne, M.B. London: B. T. Batsford. 1926. 10*s.* 6*d.*

A MEMORY GOING BACK TO THE AGE OF SIX MONTHS.

THE child of 2 or 3 has an excellent memory, as many a parent will truthfully declare, but we rarely consider the problem of our adult loss of memory for these early years. Most of the events of the first few years of life are forgotten, although it is then that character traits and modes of emotional reaction are largely determined, and it is one of the claims of psycho-analysis that some at least of the infantile memories can be restored. Sometimes, as in the classical case of claustrophobia described by W. H. R. Rivers, the reality of the event concerned has been independently verified. But the memory of Rivers's patient was of a boyhood event, and there is a notable gap between it and those earlier memories, going back to the beginning of the second year, which psycho-analysis is said to reveal. In the *Internationale Zeitschrift für Psychoanalyse* (1926, Bd. xii., Heft 1), Mr. E. Pickworth Farrow, M.A., D.Sc., describes the recovery, by a process of self-analysis, of a memory in which he recalls not only his own actions, but his emotions and intentions in a family episode at the age of six months. In this case the memory was obviously not suggested by an analyst, but to the objection that it may be a phantasy, the writer's only reply is an appeal to personal experience in distinguishing between phantasy and actual memory. Psychology can offer only speculations as to the time of appearance of the consciousness of self, upon which depends not only the memory described by Dr. Farrow, but—what is really more important—the possibility of recognising at the time his own feelings and desires. There is, however, no intrinsic impossibility in the history and the newness and strangeness of the idea that so early a memory can persist in the unconscious must not prevent us from recognising the importance of such observations.

BRIGHTON GUARDIANS AND A NURSES' HOME.

BY 18 votes to 17 the Brighton Guardians have decided to build a nurses' home for the staff of the Poor-law Infirmary at a cost of £35,000. The matter had been before them for a long time, their previous decision being in favour of what the Ministry of Health described as a poor, inadequate, and makeshift scheme (THE LANCET, 1926, ii., 807). After the Ministry had declined to sanction their plan for the conversion of existing accommodation at a cost of £1150, the guardians appointed a special committee, and this unanimously reported that lack of accommodation caused the present difficulty in retaining a competent and contented nursing staff.

DONATIONS AND BEQUESTS.—The late Mr. George Paterson Walker, of Heatherwood, Putney Heath, S.W., left by will £2000 to Kilmarnock Infirmary.—By the will of Captain Athelstane Robert Pryce, late 18th Hussars, J.P., D.L., of Cyfronydd, Welshpool, the testator left £1000 each to the Royal Salop Infirmary and the Eye, Ear, and Throat Hospital for Shropshire and Wales.—The Royal National Orthopædic Hospital, Great Portland-street, W., has received a legacy of £2000 duty free from the late Miss Dora Clarita Abisdid.—Mr. Arthur Humpston, of Woking, formerly of Derby, bequeathed £2025 to the Royal Derby Infirmary to endow two beds in memory of his son, Arthur Robert, who was killed in Flanders in 1917, and after his wife's death £300 each to the Derbyshire Hospital for Sick Children, the Royal Institution for the Deaf and Dumb Derby, and the Railway Servants' Orphanage, and £7000 to the Royal Infirmary, Derby, to endow beds in memory of himself and his wife.—Mr. Bernhard Barron, of Hove, Sussex, has given £25,000 to hospitals and other philanthropic institutions in celebration of his seventy-sixth birthday.—The late Miss Jessie Ann Thomson, of Carlton-place, Aberdeen, left by will, among other bequests, £1000 each to Aberdeen Royal Infirmary and Aberdeen Royal Hospital for Sick Children; £500 to Morningfield Hospital and a similar sum to the Indigent Lunatic Fund Aberdeen.

Impressions OF THYROID SURGERY IN AMERICA.

BY W. SAMPSON HANDLEY, M.S. LOND., F.R.C.S. ENG.,
SURGEON TO THE MIDDLESEX HOSPITAL; HON. FELLOW OF THE AMERICAN COLLEGE OF SURGEONS.

THE United States was described to me by one of its citizens as the most magnificent piece of real estate on the face of the globe. If Canada be included as part of the "lot," the description is certainly accurate. Nevertheless this rich continent seems to be short, at any rate in certain portions of its extent, of one thing besides rubber—namely, iodine, that essential element of vital chemistry. I was told of a certain farm in a fertile district of Western Canada where the farmer was threatened with ruin on account of the infertility of his stock. The importation of fresh blood failed to overcome the difficulty, but acting on expert advice the farmer mixed a minute amount of iodine or iodide with the drinking water. The remedy worked marvels, comparable to the peeled wands employed by Jacob for a similar object, and at the expenditure of about two dollars a year for iodide the curse of infertility has been completely exorcised.

The shortage of iodine is indicated, so far as concerns the human race, by the great frequency of goitre, especially of the exophthalmic variety, of thyroid adenomata, and of consequent hyperthyroidism in certain States. The maximum frequency seems to be attained on the Pacific slope, and a practitioner from this region told me that between 50 and 60 per cent. of his women patients suffered from hyperthyroidism. While in England hyperthyroidism in men is rare, it is quite common in the States. At Dr. George Crile's Cleveland Clinic thyroid operations —there often done by several stages—appear to be twice as common as all other operations together, no doubt because of the reputation Dr. Crile has attained in this field of surgery. At the Mayo Clinic, too, as judged by one day's list, about one operation in six is a thyroid operation.

HEAVY INCIDENCE OF HYPERTHYROIDISM IN AMERICA.

It would be interesting to speculate as to the reason for the heavy incidence of hyperthyroidism in America. Is it due merely to a continental shortage of iodine, or is it due mainly to the strain of the strenuous American life? That Americans believe iodine-starvation is an essential factor is shown by the wide prevalence of the custom of giving iodine tablets as a routine to growing children. I believe one tablet a week, containing about $\frac{1}{4}$ gr. of iodine, is regarded as a reasonable dose, or the iodine may be given as an iodised table salt. It must be remembered that few American children can enjoy the yearly visit to the sea, and the generous provision of salt-water fish, which provide iodine for the growing English child. It would seem that the intellectual stress which often appears to produce exophthalmic goitre in the clever and ambitious American college girl might usually be harmless in a body adequately stocked with iodine.

It would be going too far to suggest that the restless activity which characterises America indicates a national basal metabolism raised by iodine shortage. It is natural that a great nation in the first flush of its national virility should be restless and eager, and there is no need to find a pathological explanation of these phenomena. Nevertheless the speculation is interesting.

It will be evident that the medical profession in America has enjoyed excellent opportunities for the study of hyperthyroidism, and it has used them very effectively. Particularly it has ended the controversy which has raged for years as to the advisability of giving iodine in hyperthyroid conditions. In Europe one school, headed by Kocher, considered that the administration of iodine in such conditions was a dangerous and indefensible practice, likely at the best to do no good, and at the worst to cause complete breakdown. Other authorities considered iodine a valuable remedy.

THE RÔLE OF IODINE IN THE TREATMENT OF HYPERTHYROIDISM.

A school of metabolists in America, headed by Plummer, of the Mayo Clinic, has reconciled these opposing views. They have shown that iodine is no permanent remedy for hyperthyroidism, but on the other hand that it has a powerful if temporary controlling influence on the symptoms for a period of several months when used in appropriate and moderate doses. The administration of a single large dose of 50 minims of Lugol's solution—a solution of iodine 5 per cent. and potassium iodide 7½ per cent.—will within 24 hours entirely change the clinical aspect of a case of hyperthyroidism of medium severity. The characteristic stare disappears, the emotional responses lose their uncontrolled violence, and the pulse becomes slower and less tumultuous.

In mild cases a judicious perseverance in the use of small doses of iodine may result in a clinical cure, but it is believed that this is due to the opportunity thus afforded to the thyroid cells to recover their normal function rather than to the direct effect of the iodine itself. In severer cases, if iodine is persisted in for a period of months, even in small doses, the initial improvement is ultimately followed by an acute crisis, manifesting itself by an alarming aggravation of all symptoms, even up to the point of mania.

Now comes the main practical point of the American teaching. Though iodine is not curative, it will in all cases, except in those already maniacal, produce such a temporary improvement as to enable a curative operation for the removal of the thyroid to be undertaken with hardly any risk. Iodine treatment not only relieves the symptoms but it brings about a great reduction in the vascularity of the gland and so reduces the risk of the operation considerably. In the Mayo and Cleveland Clinics, and in the service of Dr. Kanavel in Chicago, the mortality of thyroid operations is now less than 1 per cent. This is a surprising improvement, in view of the fact that many of these patients have already received serious damage to their heart muscle, as indicated by auricular fibrillation. Some authorities believe that the operation in such cases should be preceded by a course of digitalis, but others consider this unnecessary. The vital necessity for a pre-operative course of iodine is universally agreed upon.

THE TWO VARIETIES OF THYROID ENLARGEMENT.

Thyroid enlargements causing serious metabolic disturbance are divided by Plummer into two classes, exophthalmic goitre and toxic adenoma. In the former class there is diffuse parenchymatous hypertrophy and hyperplasia of the thyroid tissue; with exophthalmos, or at least a characteristic stare, a characteristic nervous psychical condition, and pulsating thyroid in which thrill and bruit are present. In the toxic adenoma class there is irregular enlargement of the thyroid, owing to the pressure in it of adenomata which show active hyperplasia of their epithelium. In the toxic adenoma exophthalmos is absent, the thyroid does not pulsate, or only slightly, nervousness, palpitation, tachycardia, vasomoter and gastro-intestinal symptoms and wasting are absent, the blood pressure is raised, and the cardio-vascular disturbances, such as auricular fibrillation and myocarditis, are in the foreground of the clinical picture.

According to Plummer the chemistry of the two contrasted conditions differs essentially. In exophthalmic goitre there is a condition of dysthyroidism due to absorption of a pathological secretion which is insufficiently or not at all iodised, while in toxic adenoma there is an excessive production and absorption of a completely iodised and presumably normal

secretion, a true simple hyperthyroidism. Clinically the distinction between these two classes is not as simple as the foregoing description would indicate, for mixed cases are frequent in which adenomata are found in goitres presenting some or all of the signs of exophthalmic goitre. Graham, of Cleveland, in opposition to Plummer, believes that the chemistry of the tissue of a thyroid adenoma does not essentially differ from the chemistry of the parenchyma of the gland. In his view no distinction can be drawn between dysthyroidism and hyperthyroidism, and he believes that exophthalmic goitre and toxic adenoma are clinical variations of a single disease.

Plummer believes that exophthalmic goitre and toxic adenoma respond differently to iodine in that the former state is invariably for a time benefited, while in the latter the giving of iodine is contra-indicated, except in small doses for a short time as a preliminary to operation. Graham, on the other hand, maintains that in cases of toxic adenoma previously untreated by iodine, the giving of the drug is invariably followed, as in exophthalmic goitre, by a period of improvement. Graham thus sums up his views on iodine administration: When thyroid tissue is hypertrophic and hyperplastic, whether it be the tissue of an adenoma or of the parenchyma of the gland, the administration of iodine is indicated if an operation is contemplated as a necessary preliminary to that operation. If, on the other hand, the thyroid tissue is in a colloidal or resting state, and no signs of hyperthyroidism are present, there is no indication for iodine so far as the thyroid function is concerned, and its ill-advised use may be decidedly harmful.

PREPARATION OF A PATIENT FOR OPERATION.

The introduction by Plummer of preliminary iodine treatment before operation has entirely altered the outlook in exophthalmic goitre, by greatly diminishing the risk of operation and making it easier by reducing the vascularity of the gland. Lugol's solution is universally used in America. On the patient's admission a dose of 50 to 60 minims is given by enema or by mouth, and subsequently doses of 10 to 15 minims are given by mouth for seven to ten days. By this time the basic metabolism has fallen to normal, the pulse has slowed down, and the mental condition has improved. The patient is now operated upon. The day after the operation 50 minims of the solution is given as an enema, and subsequently the small daily doses are continued during convalescence. Lugol's solution should not be given during acute thyroid breakdown or mania, and its prolonged use over a period of months is likely to be followed by an iodine crisis with aggravation of all the symptoms. If auricular fibrillation is present most American authorities advise a course of small doses of digitalis, but others appear to attach little importance to fibrillation, if the iodine preparation has been carried out. Prior to the operation it is usual to give an injection of scopolamine and morphine or of morphine alone.

Anæsthesia.—The usual practice in America is to rely mainly on local novocaine anæsthesia. Ethylene gas, or nitrous oxide, or nitrous oxide and ether are used to supplement the local anæsthetic, especially if the morale of the patient is poor.

MODE OF OPERATION.

It appears to be characteristic of American methods of operation to avoid the dislocation of the thyroid, the operative step upon which Kocher laid such stress. Associated with this difference it is usual in America to avoid the transverse division of the infrahyoid muscles, and even of the platsyma (Crile), in order to preserve the contour of the neck. The usual incision is the collar incision made 2 inches above the sternum, so that its downward displacement during healing shall not bring it over the chest. The skin is undermined up to the hyoid and down to the sternal notch. The thyroid is exposed by a median incision through the deep fascia from the hyoid to the sternum. The infrahyoid muscles and fascia are then retracted by an automatic retracto and other retractors draw the skin flaps out of t way upwards and downwards. Since the thyro has not been dislocated it is impossible to see a ligature the main thyroid arteries and ablation begun by division of the thyroid capsule along i outer margin. Behind this line the removal is entire subcapsular and vessels, often very numerous, a seized as they appear, and from within the capsul Thus the branches of the main arteries are secure instead of the arteries themselves. The lobe carefully dissected from the trachea without exposi that tube. If the trachea is laid bare, according Crile, troublesome coughing will ensue. If the oth lobe is to be removed it is dealt with in the same wa

It is the policy of some of the leading thyroi surgeons to remove at one operation all the glan except a small posterior portion to ensure the safet of the parathyroids and the recurrent laryngea nerves, while others proceed by steps, first ligaturin the superior thyroid artery on one side, and the removing the gland half at a time. It may b interesting to describe these personal variations procedure a little more in detail, and I will take the in the order in which I happened to visit the variou clinics.

A. B. Kanavel, in Chicago, is accustomed to remov nearly the whole gland at one operation and h mortality is very small. He considers that undesi able post-operative symptoms are less likely to occu after such a radical operation than after more limite removal. He gives scopolamine and morphine befor the operation, and ethylene, if necessary, during it course, but novocaine infiltration is also used freel throughout, and especially at the posterior part the gland.

I regret I am unable to describe from persona observation the operative procedure at the May Clinic. Dr. D. C. Balfour, who has done so much i association with the brothers Mayo to develop thyroi surgery, was not operating at the time of my visit nor did I happen to see a thyroidectomy by D J. de J. Pemberton.

Crile, at the Cleveland Clinic, sometimes perform as many as 16 thyroid operations in a morning This is made possible by his own dexterity, by per fection of organisation, and by the trained assistanc which anticipates the operator's desires before h can express them. A proportion of the operations too, consists merely in the ligature of the superio thyroid arteries, or rather of the superior pole the gland. This is done under local anæsthesi through a small transverse incision. The capsule the thyroid is divided in the line of the skin incisio and a branch of the artery is seized. Traction i made upon this, and a mass ligature is then passe around or through the superior pole, so as to secur the main branches of the artery. Perhaps a wee later one half of the thyroid is removed, or the whol gland if the patient's condition warrants it. Loca anæsthesia with novocaine is, if possible, used through out, supplemented if the patient's morale will no stand the ordeal by ethylene or gas anæsthesi Novocaine is used in large quantities, perhaps up t 100 c.cm. of ½ per cent. solution. After the colla incision has been made and the flaps undermine upwards and downwards superficial to the platysma the deep fascia is incised in the middle line an retracted sideways along with the infrahyoid muscles Now comes a characteristic and important step. Th novocaine needle is introduced beneath the capsul and the gland is distended with the novocaine solutio The needle is then plunged into the substance of th thyroid right to its posterior surface, and the solutio again forcibly injected in this situation. Not onl is a very efficient anæsthesia in this way secured, bu the subsequent dissection is greatly facilitated b the separation of the tissue planes. It appears tha the fluid injects all the lymphatics and thus spread widely in the tissues around the gland itself. Cril appears to leave rather more of the posterior surfac of the gland than Kanavel.

F. G. Starr, in Toronto, facilitates lateral retraction by making an incision through the deep fascia along the anterior edge of the sternomastoid on each side. In this city also thyroid operations are very successful.

Thanks to the opportunities afforded by the frequency of thyroid disease in America, the work of American pathologists and the skill of the American surgeons has been specially directed to the thyroid, and a national menace is in process of being effectively met.

In conclusion, I would emphasise the fact that this paper has no pretensions to completeness, nor does it attempt to assign to individuals their relative share in the progress which has been achieved.

Observations ON THE ACTION OF LOBELINE.*

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AND
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(From the Physiological Laboratory, Middlesex Hospital Medical School.)

INTEREST in the action of the lobelia alkaloids was stimulated when Wieland[1] first isolated in 1918 a pure crystalline compound from *Lobelia inflata* (Indian tobacco). This was a basic crystalline substance to which the empirical formula $C_{23}H_{29}O_2N$ is assigned. The melting-point is 130–1°C. To this alkaloid the name alpha lobelin has been given. The hydrochloride is the most soluble salt and is the one usually employed in pharmacological studies. The characteristic chemical reaction of the alkaloid is, that on warming with water, aceto-phenone is split off. Wieland has also isolated two other compounds —lobelidine $C_{20}H_{25}O_2N$ and Base B—for which the empirical formula $C_{22}H_{27}O_2N$ was suggested. In a later paper Wieland, Schöpf, and Hermsen[2] have considered the chemistry of two further crystalline alkaloids—namely, lobelanin and lobelanidine. Lobelanin is apparently identical with the Base B previously mentioned, and the empirical formula now assigned to it is $C_{22}H_{25}O_2N$. It should be mentioned that the older lobeline of Dreser [3] probably consisted of a mixture of amorphous alkaloids. Wieland [4] studied the pharmacology of a probably impure lobeline sulphate prepared by Merck. He showed that in narcotised pigeons, after the administration of lobeline, the respiratory centre reacted to a smaller concentration of CO_2 in the alveolar air and blood than normal. Later, Wieland and Mayer studied [5] the action of purified lobeline, and proved it to be a powerful stimulant to the respiratory centre and to produce a great increase in the pulmonary ventilation. It was able to stimulate the breathing after the administration of narcotic and depressant substances like urethane, chloralose, and morphine. Lobelanin was found to have about half the effect on the centre as compared with lobelin.

Since the publication of this paper a considerable clinical literature has accumulated chiefly from American and continental sources. It is claimed that, clinically, lobelin restores regular breathing after overdosage with morphia, after carbon monoxide poisoning,[6] in accidents of anæsthesia, in asphyxia neonatorum,[7] pneumonia, and in stenosis of the respiratory passages. It is also repeatedly stated that lobelin acts specifically on the respiratory centre, and has no side actions on the vomiting centre or on the circulatory system. From the pharmacological point of view lobeline is usually classified with nicotine (Cushny,[8] Sollmann [9]), and by implication has widespread effects in the body. It was thought that as lobeline appeared to be coming into more general clinical use, a careful reinvestigation of its pharmacology would be of value.

* A paper read on Dec. 14th, 1926, to the Section of Pharmacology and Therapeutics of the Royal Society of Medicine.

Methods.—We have carried out experiments on dogs, cats, and rabbits. To avoid the complicating factor of anæsthesia a number of observations have been made on animals which had been decerebrated through a trephine opening in the skull. As the drug is advised in states of respiratory depression numerous observations were made in animals under the influence of ether, chloralose, and morphine, and after damage to the respiratory centre.

EXPERIMENTAL FINDINGS.

The Heart.

The movements of the heart were recorded with a myocardiograph after the method of Oliver and Schäfer,[10] with the chest open and the breathing maintained by means of artificial respiration. Initial and secondary effects may be described.

1. *Initial Effect.*—With doses of 1 mg. lobeline in the cat there is an immediate slowing of the heart—e.g., from 33 beats in 10 seconds to 26 beats. The force of the auricle is considerably diminished. The ventricle is similarly affected, but as a rule to a less extent. There is increased relaxation of the heart between the beats. This cardiac inhibition usually causes an initial fall of blood pressure. Sometimes the blood pressure may rise from the first in spite of the cardiac inhibition. The initial depression may

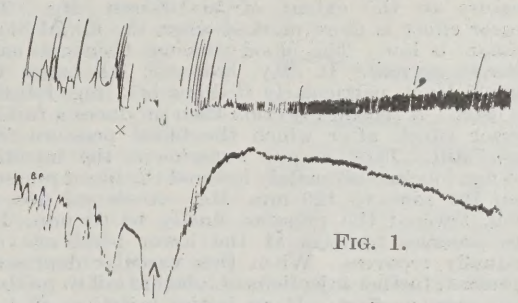


FIG. 1.

Cat. Decerebrate. Upper record = Respiration. Lower record = Blood pressure. Irregular breathing is present. At X an apneusis is shown on which are superimposed a number of small gasps. At the arrow 1 mg. adrenin was injected. Note the rise of blood pressure and the restoration of regular breathing.

be so marked as to cause a profound fall of blood pressure. If the heart is in an enfeebled state, the initial inhibition may arrest it altogether and cause death of the animal within a few seconds. The depression of the ventricle may persist for several minutes, especially if large doses of lobeline—e.g., 7 mg. in the cat—have been administered, but may also occur after smaller doses. It may only wear off gradually with the decline of the general lobeline action (Fig. 5).

2. *Secondary Effect.*—Following on this inhibition, the heart-rate returns to normal or may accelerate further. There may also be an increase in the force of the contraction of auricle and ventricle. With small doses of lobeline the heart gradually returns to its original force, but after larger doses—e.g., 3 mg.—secondary slowing and enfeeblement set in, which are only gradually recovered from.

After section of the vagi the initial slowing is less marked, a fact which suggests that it is partly due to stimulation of the vagus nucleus in the medulla.

After *atropine* the initial cardiac inhibition is abolished or is much less evident, showing itself by trivial slowing. This indicates that the inhibition which persisted after section of the vagi was due to stimulation of the peripheral vagal mechanism. The secondary augmentation of the heart is usually still evident, but we find that sometimes it may be absent. A curious secondary depression may be observed in the auricle. Coincidently with the rise of the blood pressure the auricle is found to relax less between the beats and there is in consequence marked diminution in the extent of the contraction. As the blood pressure falls this excessive state of tone passes off and the extent of the contraction returns to normal. Finally the secondary slowing and diminution of force already noted in the unatropinised animal set in.

Lobeline causes secondary paralysis of the peripheral part of the vagus. If the peripheral end of the cut vagus is stimulated after the administration of lobeline, it is found that a stronger stimulus must be employed to produce cardiac slowing than was necessary previously. Even with maximal stimuli only very slight inhibition is produced. This paralysis persists for several hours and wears off slowly. It is thus seen that the effects of lobeline on the heart are very complex. There is initial stimulation both of the vagus nucleus in the medulla and of the ganglion cells of the vagus in the nodes of the heart. These cells show subsequent paralysis. The acceleration which follows on the initial slowing is probably due to stimulation of the sympathetic ganglia which supply the heart. In addition lobeline has a direct poisonous action on the heart muscle. Even after the administration of atropine, doses of 3 mg. of lobeline leave the heart in a flabby condition and beating slowly and feebly.

Blood Pressure.

With the vagi intact there is often an initial fall of blood pressure—e.g., 10–20 mm. Hg—which is probably due to the cardiac inhibition already described. This is followed by a rapid rise of blood pressure to the extent of 50–100 mm. Hg. The pressor effect is more marked when the initial blood pressure is low. The blood pressure then gradually sinks to normal. It may, however, fall below the original level, particularly if doses of 3 mg. lobeline are used. A second injection then produces a further pressor effect, after which the blood pressure falls lower still. Thus in one experiment the injection of 1 mg. lobeline ultimately lowered the blood pressure from 150 mm. to 120 mm. Hg. A second dose of 3 mg. lowered the pressure finally to 60 mm. Hg. The pressure remains at the lower level or very gradually recovers. When this vascular depression is present, further injections of lobeline fail to produce their pressor effect. If an initial injection of 4 or 5 mg. of lobeline is made, there may be no pressor effect at all. The blood pressure gradually falls to reach a low level. In the pithed animal the rise of blood pressure after lobeline is marked and prolonged. This suggests that the drug has little if any action on the vasomotor centre. The after-fall of blood pressure may in part be due to the secondary cardiac depression already described, but paralysis of the ganglia along the course of the vasomotor fibres may be a more important factor. If the semilunar ganglion is painted with 2 mg. lobeline, stimulation of the cut end of the splanchnic nerve no longer produces the usual rise of blood pressure. Furthermore, when lobeline no longer produces pressor effects the injection of adrenin still causes a rise of blood pressure, indicating that the vasomotor terminals are still intact.

FIG. 2 A.

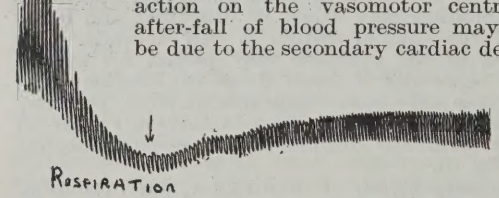
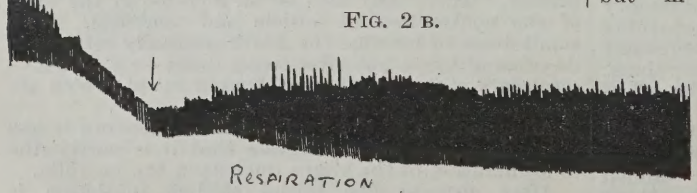


FIG. 2 B.



Dog. 6 kg. Ether. Record of respiration. A. Deep ether was administered till the breathing became slow and feeble. At the point marked with the arrow the anæsthetic was discontinued. Recovery took place slowly. B. The experiment was repeated, but at the arrow 1 mg. lobeline was injected. Note the immediate acceleration and increased force of the breathing.

The gradual fall of blood pressure which, as noted above, may be the sole effect of large doses of lobeline is presumably due to paralysis of the vasomotor ganglia without any initial stimulation. The pressor effect of lobeline is less marked in the rabbit than in the cat or dog. It is also abolished to a considerable extent by the administration of large doses of morphine. Lobeline thus first stimulates and then paralyses the ganglia along the course of the vasomotor nerves. Complex blood pressure changes may be produced because of the variable effects on the heart which have already been described.

FIG. 3 A.

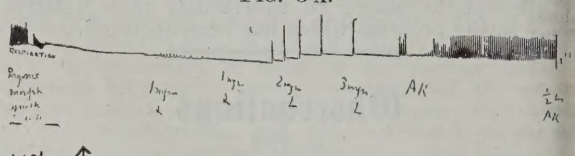
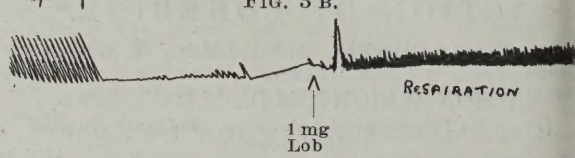


FIG. 3 B.



Dog. 6·5 kg. Morphia. A. An additional 10 mg. morphine were injected and apnœa resulted. The successive injection of 1 mg., 1 mg., 2 mg., 3 mg. lobeline only initiated a few ineffective gasps. Artificial respiration was maintained for half an hour after which slow gasps appeared which soon failed. B. Artificial respiration was resumed and at the point marked with the first arrow adrenin was injected. This raised the blood pressure. The artificial respiration was discontinued. The injection of 1 mg. lobeline now initiated regular breathing.

Respiration.

Lobeline markedly stimulates the respiratory centre and causes a considerable increase in the pulmonary ventilation. These effects are well marked in decerebrate animals which have recovered from the effects of the preliminary volatile anæsthetic, or in dogs under light morphia narcosis. We find, however, that the dose which produces respiratory stimulation also produces the circulatory effects already described.

There may be an initial increase in the rate of the breathing without alteration in depth, or even with diminution in depth. This acceleration is by no means constantly obtained, but it appears to be independent of the integrity of the vagi. Following on this, or as the first effect, there is marked increase in the depth of the breathing without change of rate or with slight slowing. In the dog (5–7 kg.) the respiratory effect is well marked with 1 mg. doses of lobeline. The breathing may remain regular, but in the dog especially it is common to find larger and smaller breaths alternating or irregularly interspersed. Doses of 5 mg. in the dog produce violent convulsive respiratory movements in which all the accessory muscles of breathing are involved. The respiratory record then shows marked irregularities; very shallow breaths are present between the very deep ones. Groups of rapid breaths occur. As the initial violent effect wears off a regular deeper breathing persists for ten minutes or longer. There can be no doubt that the threshold of the respiratory centre to CO_2 is lowered by lobeline, because the prolonged and intense hyperpnœa does not give rise to apnœa, but is followed by persistent hyperventilation.

In the cat we have sometimes noted that after the initial stimulating effect has passed off the breathing becomes shallow and slow. This may be associated with stridor. It may, therefore, be due to the bronchoconstriction and increased bronchial secretion which we have found to occur in this animal. In the cat under chloralose an initial inhibition of the respiratory movements of 5–10 seconds

duration may be seen. This is also frequently observed under the same conditions in the rabbit. In this animal there may be either diminution in the extent of the breathing or definite apnœa which is very similar to the apnœa produced by doses of 0·15–0·3 mg. of adrenin. It is unaffected by double vagotomy. The apnœa may possibly be due to bronchoconstriction which prevents the entry of air into the lungs. According to Roberts [11] adrenin apnœa is due to constriction of the blood-vessels supplying the respiratory centre. He has further shown that other vasoconstrictor drugs like pituitrin and barium chloride may cause inhibition of the breathing. It is, therefore, conceivable that the lobeline apnœa may belong to the same category and be due to anæmia of the medulla. In the rabbit in which small doses of lobeline depressed the breathing, the injection of 9 mg. lobeline resulted in increased depth of respiration.

The effects of lobeline were studied in animals under the influence of chloralose, morphia narcosis, deep ether anæsthesia, asphyxia, and after injury to the respiratory centre.

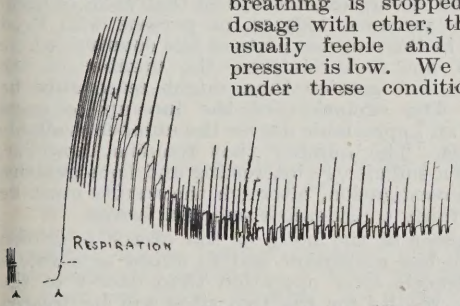
Chloralose.

In animals anæsthetised by the injection of 10 c.cm. of a solution of chloralose saturated at 40° C., the respiratory effects of lobeline are considerably less marked and wear off after a short time. Sometimes two or three deep gasps constitute the whole of the respiratory response. Sometimes no respiratory stimulation whatever results. The apnœa which may occur in animals under chloralose has already been noted.

Ether.

It is very difficult experimentally to produce respiratory paralysis with ether without at the same time depressing the circulation to a great extent. When the breathing is stopped by overdosage with ether, the heart is usually feeble and the blood pressure is low. We have failed under these conditions to restore the breathing with lobeline alone. It is possible that as the circulation is so feeble, adequate concentrations of lobeline do not reach the respiratory centre. We have, therefore, pushed our anæsthesia till the breathing was slow and feeble, and tried the effects of lobeline under these conditions. Fig. 2 shows that recovery is definitely more speedy after the injection of lobeline than in the control animal. Marked acceleration of the breathing results and there is increase in depth subsequently too.

FIG. 4.



Cat. Decerebrate. Artificial respiration. When it was discontinued apnœa was present. 5 mg. lobeline were injected and rhythmic breathing was restored.

Morphia.

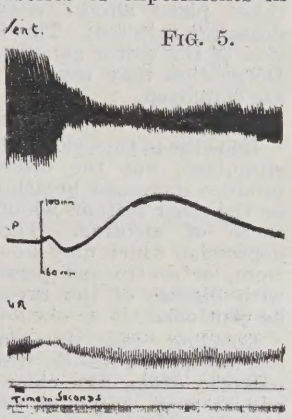
In the dog under light morphia narcosis respiratory effects can be obtained with lobeline as marked as in the decerebrate animal. In the cat 1 mg. morphia slowed the breathing to 13 in 130 seconds. The ventilation was very inadequate and the blood became dark in colour. The successive injection of 2 mg. and 3 mg. lobeline increased the rate of the breathing to 30 in 130 seconds. A second injection of 1mg. of morphia while the animal was still under the influence of lobeline caused much less slowing of respiration, and the blood remained a bright red colour. In another experiment 4 mg. morphia produced apnœa; regular though slow breathing was restored by 4 mg. lobeline.

Sometimes, if apnœa is produced by morphia, lobeline may succeed in initiating a few gasping respirations and then apnœa sets in again. Fig. 3 illustrates such an experiment. Artificial respiration had to be resorted to finally. When it was discontinued the apnœa still continued. The blood pressure was raised by the injection of adrenin and then lobeline succeeded in establishing regular breathing.

Lobeline can thus readily overcome doses of morphia which produce respiratory slowing. If complete paralysis of the respiratory centre is present, then lobeline is much less effective. We have already noted that under deep morphia narcosis the pressor action of lobeline is abolished. We are again faced with the difficulty of the low blood pressure. If the circulation is stimulated by adrenin, lobeline is much more potent.

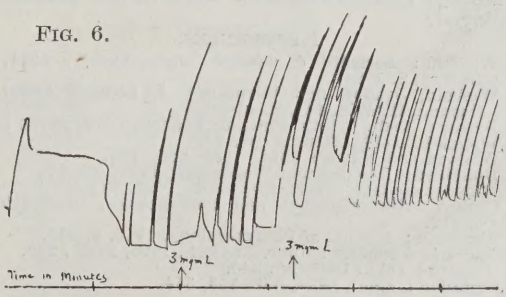
We have carried out a series of experiments in which the brain stem was divided rather low down in the region of the upper pons. We have been able to confirm the observations of Lumsden [12] concerning the alterations in respiratory rhythm which occur. Usually gasping breaths are found to alternate with long apneuses, during which the breath may be held in the inspiratory position for over one minute. The administration of lobeline under these circumstances has produced variable results. It may have no effect at all, or it may shorten the duration of the periods of apneusis. In the experiment illustrated in Fig. 4 the breathing failed after being shallow and irregular, and artificial respiration was commenced. This was discontinued and apnœa supervened. The injection of 5 mg. lobeline almost immediately produced a powerful inspiration. There was an increase in inspiratory tonus. Rhythmic breathing was restored, which was, however, somewhat irregular in character. In Fig. 6 apneustic and gasping breathing were present, and fairly regular breathing was obtained after the repeated injection of 3 mg. lobeline. In some of our experiments we have found adrenin alone, in large doses—e.g., 0·5 to 1 mg.—

FIG. 5.



Cat. Chloralose. Artificial respiration. Upper record = Ventricle. Middle record = B.P. Lower record = Auricle. At the signal 7 mg. lobeline were injected. Note the profound and prolonged inhibition of the ventricle.

FIG. 6.



Cat. Decerebrate. An apneustic breath is shown which persisted for one and a quarter minutes and was followed by a few gasps and irregular breathing. The repeated injection of 3 mg. lobeline restored rhythmic breathing.

remarkably effective (Fig. 1). It is thus clear that the damaged and partially asphyxiated respiratory centre present after low decerebration may sometimes be restored to regular rhythmic activity by lobeline. Sometimes the improvement in the cerebral circulation which results from adrenin may have the same effect.

Bronchi.

In the pithed cat we find that lobeline usually produces slight constriction of the bronchi. In the rabbit we obtained negative results. These results

are of interest in view of the fact that lobelia is so widely employed in the treatment of asthma. The vagal nerve-endings are subsequently paralysed, so that stimulation of the peripheral end of the vagus no longer produces the usual bronchoconstriction.

Other Effects.

It is claimed that the purified lobeline does not produce vomiting. We found, however, that this is not the case. Doses of 2 mg. or over in the cat not infrequently produce vomiting. The threshold of the vomiting centre is approximately four times as high as that of the respiratory centre. Micturition takes place almost constantly when quite small doses are injected. This is due probably to stimulation of the motor ganglia in the wall of the bladder. Defæcation may result if large doses—e.g., 5 mg.—are employed.

SUMMARY.

Lobeline is thus shown to be a powerful respiratory stimulant, but the doses which are necessary to produce increased breathing have widespread effects on the other systems which resemble in many respects those of nicotine. The drug produces cardiac depression which may be slight and rapidly recovered from, or severe and persistent. Its use in patients with disease of the myocardium should, therefore, be cautious.

Lobeline can overcome to some extent the respiratory depression which is produced by various narcotic drugs like chloralose, morphia, and ether, and it may prove of value in sudden respiratory failure from any cause. The respiratory centre which has been partially asphyxiated and injured as a result of low decerebration may sometimes be restored to rhythmic activity. Our experiments suggest that lobeline may be worthy of more extensive clinical trial, so long as the dangers inherent in the drug are borne in mind. If the blood pressure is low, lobeline will probably be found to be more effective if combined with circulatory stimulants. We have made no observations in man, and are unable to state what doses of lobeline will be found necessary in the human subject, but on the basis of our animal experiments we would suggest that doses of about 10 mg. or more, given intravenously, may be found effective.

The expenses of the above research were partly defrayed by a Government grant, made through the Royal Society to one of us (S. W.). We are indebted to Messrs. Zimmermann for some of the lobeline we employed.

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QUEEN ALEXANDRA MEMORIAL.—The highest ratio of contributions towards this memorial, which is to take the form of supporting the work of the Queen's nurses, is 21·6 per cent. in Peeblesshire; the lowest, 0·89, in London. In England, Rochdale is at the head of the list with 3·5 per cent.

EXTENSIONS of the Dudley-road Hospital, belonging to the Birmingham Guardians, which have just been opened, have, it is claimed, made it the largest institution of its kind outside London. Since it was opened in 1887 for the treatment of infirm, bedridden, and chronic cases it has undergone many changes. During the war it was a military hospital, but since the guardians resumed possession it has become a general hospital where patients are treated, not as subject to the Poor-law, but as members of the general public. Last year 13,000 patients passed through the hospital.

CANCER OF THE UTERUS.

A STATISTICAL STUDY; WITH SPECIAL REFERENCE TO THE RESULTS OF OPERATION.

BY CLARA STEWART, M.B., B.S. LOND.,
AND
MATTHEW YOUNG, M.D. GLASG.

(*From the Department of Pathology and Bacteriology, University of Leeds, and the Statistical Department of the Medical Research Council.*)

Introductory.—The data on which this investigation is based comprise all the patients with cancer of the cervix and cancer of the body of the uterus amongst those operated on in the Women's Hospital, Leeds, and Gynæcological Wards of the General Infirmary, Leeds, during the decennium 1911–20, in which the carcinomatous nature of the growth was confirmed by histological examination. The series embraces in all 214 cases of cancer of the uterus, of which 176 were located in the cervix and 38 in the body. The post-operative histories of all these patients, with a few exceptions, have been traced for five years at least after the operation, or till the date of death if this occurred under five years thereafter. Some who survived the operation for five years have been traced as still alive for much longer periods, as will be described later. In a certain number of patients—namely, 23—or practically 10 per cent. of the total series, it was impossible to trace the complete post-operative histories. The proportion of untraced cases may appear relatively large, but in view of the fact that the area of country from which the patients were derived is very extensive, and that most of them were either servants, lodgers, or persons who lived in villages in the remoter parts of the country, where letters did not find relatives, the number of the untraced is not greater than might reasonably be expected. The exclusion of the incomplete cases reduces to an appreciable degree the number available for analysis. The number that remains, however, constitutes a sufficiently interesting and homogeneous series for investigation, although the results must be subject to fairly considerable sampling errors.

Since cancer of the body of the uterus is known to be much less malignant and to afford as a rule a better prognosis after operation than cancer of the cervix, the results for the two sites will be treated separately, but will be placed in apposition for comparative purposes.

Cancer of the Cervix Uteri.

The majority of the patients with cancer of the cervix that come under review may be classified into two broad groups: (1) those undergoing a complete operation—namely, a Wertheim, an abdominal hysterectomy, or a vaginal hysterectomy; (2) those who were treated by what may be termed palliative methods, the curette, cautery, or who were merely subjected to exploratory laparotomy. Into the first group fall 116 patients, in 12 of whom the post-operative histories could not be ascertained. Of the second group, comprising 52 cases, seven were not traceable. The cases in this group are assumed to be those that were either unsuitable for a radical operation or inoperable.

In addition to these two comprehensive groups there were eight patients with cervical cancer; five of these, though curetted, would not submit to radical operation, one had an amputation of the cervix uteri, another an amputation of the stump (cervix) for cancer following a former operation abroad for removal of the body of the uterus, evidently for cancer three years previously, and another had an operation of an indeterminate nature (probably hysterectomy, as death occurred in hospital). The distribution of the subgroups of cases of cervical cancer treated by the several operative methods according to duration of post-operative life is shown in some detail in Table I.

TABLE I.—*Showing the Duration of Post-operative Life in Patients with Uterine Cancer according to Nature of the Operation.*

Nature of operation.	Duration of post-operative life.												Totals.
	Died in hospital.	–3/12	3/12–6/12	6/12–9/12	9/12–1 y.	1 y.–2 y.	2 y.–3 y.	3 y.–4 y.	4 y.–5 y.	No. alive at 5 or more years after operation (years in brackets).	No. who survived 5 years but died at year given (in brackets).	Not traced.	
Cervix Uteri.													
Wertheim's operation. ..	17	—	4	7	5	16	1	2	1	12 [5, 5, 5, 5, 5, 6, 6, 8, 9, 10, 11, 11]	3 [5–6, 7–8, 7–8]	8	76
Abdominal hysterectomy..	2	1	1	1	3	4	1	3	—	3 [5, 6, 8½]	—	2‡	21
Vaginal hysterectomy. ..	1	1	—	1	1	5	—	1	1	5 [5½, 6, 9, 9, 12]	1 [6–7]	2	19
Palliative or exploratory operations*	3	8	13	6	3	8	3	1	—	—	—	7‖	52
All others	1	—	1	2	—	1	1	1	—	—	—	1	8
Totals	24	10	19	17	12	34	6	8	2	20	4	20	176
Corpus Uteri.													
Panhysterectomy or hysterectomy..	4	—	2†	—	5	2	4	4	—	11 [5, 5, 6, 6, 6, 6, 8, 8, 10, 12, 13]	2 [6–7, 7–8]	4§	38

* Presumably inoperable. † Includes one curetted only; omitted from survivorship table.
‡ Includes one ‖ Includes two } who died in less than five years after operation but exact duration of post-operative life unknown.
§ Includes one with nature of operation uncertain.

Cancer of the Corpus Uteri.

As already mentioned, particulars were obtained of 38 cases of cancer of the body of the uterus. All the patients were stated to have undergone hysterectomy or panhysterectomy with the exception of two, of whom one was merely curetted and the other had an operation of unrecorded nature. The post-operative histories were traced for five years after operation or till the date of previous death in all except three of the 36 patients undergoing hysterectomy, leaving 33 cases available for analysis. The number is relatively small, but the results have been tabulated for purposes of contrast in a manner similar to that adopted for the cases of cervical cancer.

Duration of Post-operative Life in the Different Groups of Cases.

We now come to consider and compare in greater detail the characteristics of the group of cases of cervical cancer treated radically and that treated by palliative measures. A table was prepared, but is not published, showing for these two groups separately the distribution of durations of post-operative life when the patients were arranged in decennial age-groups, 25–34, 35–44, &c., and the percentages of the totals traced in these age-groups who survived three years and five years respectively after operation. The numbers in the different decades of life at operation were small, however, and no emphasis can be laid on such differences as appeared to exist in the percentages of survivals therein. Amongst the 104 of all ages who were operated on radically and who were traced for five years at least after operation or till the date of earlier death, 32, or 30·8 per cent., survived the operation for three years and 24, or 23·1 per cent., for five years. Of those between the ages 35 and 44 years at operation who survived the event five years at least, one was alive eight years and another 11 years afterwards. Amongst those in the decade 45 to 54 years at operation, one was still alive at eight and a half years, two at nine years, one at ten years, one at 11 years, and another at 12 years thereafter. Four survived the operation five years but died later, one in the sixth year, one in the seventh year, and two in the eighth year. As the cause of death in three of these cases, including that of a patient dying before the completion of the seventh year and another of one dying just under eight years after operation, was cancer, freedom from recurrence for five years after operation obviously cannot be assumed to indicate a cure as is frequently asserted. A feature of special interest in the table was the high mortality-rate from the effects of the operation; 20, or 17·2 per cent., of the 116 patients who had a radical operation died in hospital. Of the 45 patients treated by palliative measures, one only in the age-group 35–44 years survived the operation for three full years.

The distribution of the patients with cancer of the body of the uterus according to duration of post-operative life for the decennial age-groups was also tabulated. The numbers in the different decades of life at operation were again too small to warrant any conclusions regarding differences therein in the percentages that survived for three years or for five years respectively. Of those who survived the operation for five years, two were still alive at eight years, one at ten years, one at 12 years, and a fourth at 13 years thereafter. Two survived the event five years but died subsequently, one in the seventh and the other in the eighth year, both of recurrence of the disease.

The results in the different groups can be brought into greater contrast by means of survivorship tables. In Table II. are shown in separate columns survivorship tables for the first five years after operation for: (*a*) the group of patients with cancer of the cervix uteri who were treated by radical operation; (*b*) the patients treated by palliative measures; and (*d*) the group of patients with cancer of the corpus uteri who were treated by radical operation. For comparison with these, another survivorship table for cases of cancer of the cervix uteri is entered in column (*c*). This table is a modified form of a survivorship table which is contained in Dr. Greenwood's (1926) report to the Ministry of Health on the Natural Duration of Cancer, and which shows the number

TABLE II.—*Survivorship Tables for Five Years After Operation for Cancer of the Cervix and Body of the Uterus.*

	Cancer of the cervix uteri.			Cancer of the corpus uteri.
	Radical operation. (Wertheim, hysterectomy). (*a*)	Palliative operation (curettage, cauterisation, &c.). (*b*)	Natural duration series* (no operation). (*c*)	Radical operation (hysterectomy). (*d*)
	(104)†	(45)†	(1248)†	(33)†
l_0	1000	1000	1000	1000
l_1	567 ±49	267 ±66	362 ±13·6	697 ±80
l_2	327 ±46	89 ±42	147 ±10·0	636 ±84
l_3	308 ±45	22 ±22	79 ± 7·6	515 ±87
l_4	250 ±42	0	44 ± 5·8	394 ±85
l_5	231 ±41		25 ± 4·4	394 ±85

* Greenwood, M. (1926), vide ref. † No. of observations.

of survivors at each year for six years from the reputed date of onset of first symptoms in a series of 1749 patients with cervical cancer who received no operative treatment. The patients under review were only treated after the symptoms had been present on the average for a period of from nine to 14 months, or approximately a year. The proper comparison of the survivorship tables for the hospital cases is thus not with the survivorship table for the untreated cases as it is given in the report mentioned, but with a table constructed with the untreated survivors at the end of one year—namely, 1248 out of the original number 1749, taken as the base line or 1000. A comparison of columns (*a*) and (*c*) of the table representing the survivorship amongst the groups of the radically treated and the non-treated cases of cancer of the cervix respectively shows the very favourable results that ensue from treatment by radical operation. Notwithstanding the considerable mortality in the first post-operative year due to the effects of the operation, which has been described as 172 per 1000, the number of survivors at the beginning of the second year after operation is significantly in excess of that in the comparable group amongst the untreated. At the beginning of the fourth year after operation the number of survivors from the original number, or radix, 1000, in the group treated by radical operation is almost four times, and at the beginning of the sixth year fully nine times, the comparable numbers shown in the untreated group. Column (*b*) of Table II. shows the rapid elimination by death of the patients in the group treated by palliative measures, which consists largely of the cases that may be regarded as unsuitable for operation. At the beginning of the second year after operation the proportion of survivors in this group is less than half that shown amongst those radically treated, in spite of the high mortality in the latter group from the effects of operation. Out of 1000 undergoing operation, none survives to begin the fifth year after operation, whereas 250, or one-fourth of the original number of those treated radically, survive at the corresponding stage.

No survivorship table for patients with cancer of the body of the uterus allowed to run its natural course is available for comparison with column (*d*) of Table II. As the total number of cases in this group is relatively small, the standard errors attached to the numbers of survivors at the beginning of each successive year out of the original 1000 are considerable, and probably small stress can be laid on the differences that are shown, but it seems worthy of note that whereas 515 of the original 1000, or 51·5 per cent., survive the third year in cancer of the body; the corresponding proportion in cancer of the cervix radically treated is 308, or 30·8 per cent. This difference is statistically significant. The percentage surviving five years is 39·4 when the site is the body, and 23·1 when the site is the cervix. This difference, though suggestive, cannot, however, be judged significant on the numbers available.

There are certain other points for which data are available for comparison in the two groups of patients: (1) those with cancer of the cervix uteri with the two subgroups, the radically treated and the inoperable cases; and (2) those with cancer of the corpus uteri treated radically. These are: (*a*) the average age at operation; (*b*) the alleged duration of symptoms; (*c*) the relationship to childbirth; and (*d*) the histological nature of the primary growth.

The Average Age at Operation.

Of the 116 patients with cervical cancer undergoing radical operation the mean age at operation was 46·7 ± 0·9 years, the standard deviation of the age distribution 10·2 years, and the coefficient of variation 22 per cent. For the 52 patients treated by palliative measures, the mean age at operation was 49·8 ± 1·6 years, the standard deviation 11·5 years, and the coefficient of variation 23 per cent. For the whole series of patients with cancer of the cervix uteri the mean age at operation was 47·4 ± 0·8 years. The variability in the distribution of ages in the two groups, the radically treated and the palliatively treated, is thus practically identical, and though the mean age is three years higher in the latter than in the former group, such a difference cannot be judged significant in view of the size of the errors of random sampling.

The mean age at operation of the 38 patients with cancer of the body of the uterus was 52·4 ± 1·0 years, and the coefficient of variation 12 per cent. The mean age in this group is thus five years higher than that of the group of patients with cancer of the cervix, a difference which is certainly significant, indicating that carcinoma of the body occurs on the average later in life than cancer of the cervix.

Alleged Duration of Symptoms.

In 17 out of the 116 patients with cervical cancer who were treated by radical operation, no estimate of the duration of symptoms could be obtained. The average duration in the remaining 99 patients was 10·3 ± 1·3 months. The limits of the range were less than a month and 84 months. The wide degree of dispersion in the series of durations is shown by a standard deviation of 13·0 months, and a coefficient of variation of 126 per cent. Of the 52 patients receiving palliative treatment, the alleged duration of symptoms was ascertained in 49 instances. The average duration in these was 9·0 ± 1·1 months. The variability in duration was somewhat less than in the other group. Though very slight reliance can be placed on the reputed duration of symptoms, and no significance can be attached to the difference of one month in the average durations of symptoms in the two groups, the radically treated and the palliatively treated, it is of interest to note that the mean reputed duration of signs of the disease preceding operation is not greater in the group of presumably inoperable cases than in the group not considered too far advanced for radical treatment.

As in patients with cervical cancer, the alleged duration of symptoms in patients with cancer of the body of the uterus was very variable. The limits of the range in reputed duration were one month and 48 months, and the coefficient of variation was 79 per cent. The average value was 14·0 ± 2·2 months. This cannot be said to differ significantly from the average duration in the cervical cases.

Relationship of Childbirth to Cancer of Uterus.

There is now a considerable amount of evidence to show that childbirth predisposes to cancer of the cervix of the uterus, apparently from the trauma incident to this process, though no relationship appears to exist between it and cancer of the corpus uteri. The distribution of the two separate series of patients with cancer of the cervix and body of the uterus respectively in the present data according to marital condition and the number of children borne is shown in Table III. Miscarriages, though recorded, were excluded from consideration, as information regarding these was believed to be very unreliable. Amongst those with cancer of the cervix whose pre-operative histories were traced, the proportion of nulliparous women was 17 out of 158, or 10·8 ± 2·5 per cent., a result in close agreement with that described by various other observers. The proportion of nulliparæ amongst the cases of cancer of the body of the uterus was 15 out of 37, or 40·5 ± 8·1 per cent. The difference is 29·7 ± 8·5 per cent., which is statistically significant and indicates a quite definite relative preponderance of parous women in the former group.

Of the total cases of cancer of the uterus in the series under observation, about 96 per cent. occurred at ages over 30. The numbers of single and married women (including widows) at ages over 30 in Leeds in 1921, as given in the census, are 19,433 and 97,299 respectively, so that single women form 16·6 per cent. of the total women in this period of life. Estimates of the proportion of sterile marriages in the general population have been given by various

TABLE III.—*Showing the Distribution of the Patients with Cancer of the Uterus according to Civil State and Parity.*

Site of tumour.	Civil state.											—			
	Single.		Married.												
			No. of children.									Unknown.	Total No. with known history.	Percentage of nulliparæ.	Average No. of children per married woman.
	Np.	P.	0	1	2	3	4	5	6	7	8+				
Cervix uteri ..	5	3	12	13	19	21	20	9	9	11	36	18	158	10·8 ±2·5	4·86 ±0·29
Corpus uteri ..	9	0	6	9	4	3	2	1	—	—	3	1	37	40·5 ±8·1	2·43 ±0·55

Np. = Nulliparous. P. = Parous.

observers. In the report on the Fertility of Marriage based on data collected for England and Wales at the census in 1911, the proportion of childless marriages in families of completed fertility is given by Dr. Stevenson (1923) as 16 per cent. For the same period in Scotland the corresponding figure is stated to be 11·5 per cent. If it be assumed that the figure for England and Wales—namely, 16 per cent., which it is of interest to note is in remarkably close agreement with the figure given by Matthews Duncan (1866) for Scottish data in 1855, holds for Leeds an estimate of the nulliparæ among married women over 30 years of age in this city may be obtained. This figure, added to the total of single women corrected for incidence of parity therein, would give the total number of nulliparous women over 30. As illegitimate births in Leeds form fully 5 per cent. of the total births, some reduction in the single women to allow for parity would appear to be necessary. Unfortunately, suitable data to make this adjustment are not available. The correction required may not be so considerable as appears at first sight, however, as many single women who have borne children in early life will probably be married by the time they attain the age of 30. If it be assumed that to obtain a rough estimate the nulliparæ may be computed in the way described but without any adjustment of the number of single women, nulliparous women would appear to form 30 per cent. of the female population over 30 years of age in Leeds. The assumption that even as many as 10 per cent. of the single women are parous, probably an excessive figure, only reduces the estimated proportion of nulliparæ amongst women over 30 years to 28 per cent. Such estimates can only be considered very rough approximations, but it is interesting to note that the proportions of nulliparous and parous women in the female population in Leeds above 30 computed in this way diverge so little from the corresponding proportions in the series of patients with cancer of the body of the uterus that they cannot be adjudged significantly different, as the differences fall within twice the range of their standard errors, whereas the proportion of nulliparous women amongst the patients with cervical cancer is considerably less than in the female population at the corresponding ages.

At various times suggestions have been put forward that the number of children borne has some association with the incidence of cancer of the cervix uteri. The data available are not sufficiently numerous to investigate this question fully, but it seems to be of interest to note that the average number of children per married woman amongst those traced with cancer of the cervix was 4·86 ± 0·29, whereas the average number amongst the married women with cancer of the body was 2·43 ± 0·55, a significant difference. The period of reproductive life, it must be admitted, is doubtless incomplete in some of the patients, but any such inequality in the two groups would tend to exaggerate the difference in the mean numbers of pregnancies, as the average age of the patients with cancer of the body of the uterus has been shown to be about five years higher than that of those with cancer of the cervix.

The Histological Nature of the Primary Growth.

As a detailed histological examination of the growth had been made in all the cases under review, a brief account may be given of the incidence of the different types, though the data do not warrant an attempt to draw conclusions regarding any apparent association between type of tumour and post-operative results. Of the 176 cases of cancer of the cervix uteri, 140 were classed as squamous celled, 24 as spheroidal celled, 1 as basal celled, and 11 as adenocarcinomatous. The first and second of these groups differ only in respect of the presence or absence of epidermoid whorls and keratinisation, and are really the same tumour with varying grades of differentiation. It is probable that in nearly every case epidermoid whorling could have been demonstrated had a sufficiently prolonged and detailed examination been made. No prognostic significance could be attached to the differing histological pictures within this group in the present series. The case of basal celled cancer not only showed no evidence of whorling or keratinisation, but resembled in a quite remarkable way rodent ulcer of the skin. This patient, who was aged 44, was still alive five years after operation (Wertheim), but died soon after from pneumonia.

Of the group of 11 patients with adenocarcinoma, 9 were traced, and of these 3 died under a year, 1 under two years, and 1 under four years, while 4 are still alive at periods varying from 5 to 11 years from operation. This is a good result, but the numbers are too few to warrant generalisation. In several of the specimens squamous metaplasia was present.

All the 38 malignant tumours of the corpus uteri in the series were adenocarcinomatous in type except five, which were spheroidal celled. These five occurred in patients who were between 50 and 56 years of age at the time of operation, with symptoms reputed to have been present for periods varying from two months to a year. Four of these patients were treated by panhysterectomy, with the result that all died within 18 months thereafter, one with recurrence in the bowel.

Summary and Conclusions.

The foregoing paper contains an analysis of the post-operative histories of, and certain relevant features such as age distribution, reputed duration of symptoms, and parity in, 176 hospital patients with cancer of the cervix uteri and 38 patients with cancer of the corpus uteri. Though the numbers available are, perhaps, not sufficient to warrant any dogmatic statements on the various points investigated, the results seem sufficiently reliable to give some general indication as to what may be expected in larger series of cases. The main points that emerge from the inquiry are :—

1. The results of radical operation in cancer of the cervix uteri must be considered very favourable notwithstanding the relatively high operative mortality. The extent of the gain from this form of treatment may be gauged from the fact that in the group so treated the number of survivors at the

beginning of the fourth year after operation is nearly four times, and at the beginning of the sixth year after operation fully nine times the numbers in the comparable groups in a long series of cases permitted to run their course without treatment.

2. Though the post-operative survivorship amongst the patients with cancer of the corpus uteri treated by radical methods cannot be compared with that in a non-treated series, as such a series is not readily available, the figures suggest that the end-results in these patients are more favourable than those in patients with cancer of the cervix treated radically.

3. The average reputed duration of symptoms prior to operation in the patients with cancer of the cervix who were treated radically diverges very slightly from that in the patients who were considered unsuitable for operation; the average duration of signs in all the patients with cervical cancer is about four months less than for the patients with cancer of the body, but this difference cannot be judged significant.

4. The mean age at operation of the patients with cancer of the corpus uteri has been shown to be about five years higher than that of the patients with cancer of the cervix. The average durations of symptoms in the two groups are not significantly different, so it is evident that cancer of the corpus uteri appears later in life on the average than cancer of the cervix uteri.

5. The proportion of nulliparæ amongst the patients with cancer of the cervix uteri is 10·8 per cent. This is significantly lower than the proportion amongst those with cancer of the corpus uteri—namely, 40·5 per cent. The average number of children per married patient with cancer of the cervix uteri is 4·86, which is twice the average number borne by patients with cancer of the corpus uteri. These results support the alleged association between childbirth and cancer of the cervix.

We are indebted to the gynæcological surgeons of the General Infirmary and the Women's Hospital, Leeds, for permission to investigate their cases.

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ACUTE PANCREATITIS.

CLINICAL FEATURES AND TREATMENT.

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THIS paper is based upon 51 cases of acute pancreatitis, which have been treated at the London Hospital during the years 1911-24. In considering the clinical aspect of this condition I propose to deal with the general features, symptoms and signs, treatment and after-results, in as far as the latter are obtainable.

General Features.

Although acute pancreatitis is usually considered to be commoner in men, in this series the incidence was reversed, as out of 51 collected cases, 31, or 60·8 per cent., were females. The youngest member was a girl of 11, and the oldest a female of 73. The previous history in most cases was very interesting, indicating that the condition is one which is progressive, and that many attacks may occur before the final abdominal catastrophe. The previous histories may be summarised as follows:—

Previous similar attacks	31
No previous attacks	15
Inconclusive history	5

One obvious fallacy in compiling the above statistics is that the patient may confuse abdominal pain due to other causes—e.g., cholecystitis—with pain due to pancreatitis. However, the difficulty was realised while analysing the histories, and guarded against as far as possible.

The series included one case in which a laparotomy was performed for abdominal pain of obscure origin. A condition of "chronic pancreatitis" was diagnosed and the abdomen closed. One month later the patient was hurriedly returned from convalescent home with an attack of acute hæmorrhagic pancreatitis, which was confirmed at post-mortem. An even more striking instance of the recurrence of the condition with increasing severity may be quoted in more detail:—

Case of A. B., brewer's drayman.

1907: Aged 36. Was suddenly seized with acute abdominal pain. The diagnosis of "acute alcoholic gastritis" was made, and the patient attended the medical out-patient department. He was discharged a few weeks later as cured.

1910: Drank a glass of cold water and was suddenly seized with severe pain, similar to previous attack, vomited several times, and was admitted to hospital. On examination some tenderness and rigidity was present over the gall-bladder area. The symptoms abated and he was discharged.

February, 1924: Third severe attack while rolling barrels. Pain so acute that patient became unconscious. On admission to hospital shock was well marked, cyanosis was present, and rigidity was entirely absent. A diagnosis of acute pancreatitis was made, and the abdomen opened through a right paramedial incision. Fat necrosis was general, the pancreas was swollen and œdematous, and the gall-bladder was distended, but no stones were present. Cholecystotomy was performed and the patient recovered.

July, 1924: The patient was seized with a fourth attack similar to those described above. He was admitted moribund and died shortly afterwards.

Symptoms and Signs.

The onset of the condition is as sudden as that of any abdominal emergency, and resembles a perforated ulcer, in that the patient can usually describe precisely what he was doing at the time of onset. Pain is severe and in proportion to the severity of the attack; hence in severe attacks the patient may be collapsed and unconscious. The pain is epigastric in origin, and usually radiates through to the back. In the early stages the temperature is depressed in proportion to the shock, and the pulse is correspondingly slow and feeble. As shock passes off, the pulse improves and the temperature rises to slightly above normal, while finally both may be influenced by the onset of peritonitis.

General cyanosis, particularly of the face and extremities, was noted in 12 cases of this series; as some cases were erroneously diagnosed it is reasonable to presume that cyanosis may have been present but was unrecognised. Probably this cyanosis is due to the restricted movements of the diaphragm, consequent on subdiaphragmatic irritation or spasm of the crura. Localised cyanosis, which has occasionally been noted—e.g., in the loin—was not recognised in any of these cases.

Abdominal rigidity is a variable factor and is somewhat paradoxical, in that it varies inversely to the severity of the condition. Thus in severe cases shock is so marked that the musculature is generally relaxed, and protective rigidity is thus in abeyance. When shock subsides rigidity asserts itself, the muscles reacting to the inflamed peritoneum covering the pancreas. In cases of less severity or more localised infection, rigidity may be board-like from the commencement, particularly in the epigastrium. Vomiting occurred in practically all the cases, and was occasionally very protracted. Slight jaundice was noted in two cases. The presence of a tumour was noted in nine of the cases under review, five of these were localised rounded swellings in the upper abdomen, three in the left hypochondrium, and two in the epigastrium, the remaining four being indefinite in nature. Localisation of infection would be expected to produce a palpable swelling; in other cases where merely induration and turgidity are present, the

possible rigidity and probable obesity mitigate against detection of the pancreatic enlargement.

Special tests are, naturally, of little value in abdominal emergencies. Glycosuria may readily be recognised, but is uncommon, being present in only three out of 30 cases. The absence of glycosuria is explained by the fact that the islands of Langerhans escape destruction. Loewi's mydriatic test, consisting of installation of adrenalin in the eye, a positive result being obtained if the pupil dilates (possibly eccentrically), was definitely obtained in five cases. Apparently this under-estimates its utility, as Waring and Griffiths [1] found it positive in three out of four cases of acute pancreatitis. The diastase index, normally 10 to 20 units, has obviously little diagnostic value in emergency surgery, although in one case in this series 100 units were present. Also other acute abdominal conditions may diminish the value of this test by raising the index; thus Barling records a case of pneumococcal peritonitis with a diastase index of 50 units.[2]

Treatment.

Considerable discussion has revolved around the question of treatment, and in considering the treatment of any condition complicated by more than one pathological lesion, due regard must be paid to all abnormalities present. The most obvious pathological condition to be commonly associated with acute pancreatitis is cholecystitis, usually indicated by the presence of gall-stones. Hence this question is considered in two groups, that is, cases with gall-stones present and those in which they are absent. This is admittedly an arbitrary distinction, as cholecystitis may be present without stones which may not yet have formed, or although formerly present, may have passed along the ducts. Much emphasis has been laid upon the association of acute pancreatitis and gall-stones, the association of which has possibly been over-estimated. In 14 cases published by Waring and Griffiths, gall-stones were present in only two cases; in this series, in which adequate notes were obtainable, gall-stones were present in 25 out of 49 cases, that is, 51 per cent.

With regard to the converse association, it is stated that in 25–30 per cent. in which operation is performed for gall-stones, some degree of pancreatitis is present. It must, of course, be admitted that in any case it is extremely difficult to recognise at operation a minor degree of pancreatic involvement. Forty-seven cases were submitted to operation, the remaining four not recovering sufficiently from shock or toxæmia to allow of surgical interference.

For the purpose of comparison the operative measures may be divided into the following three procedures: (1) drainage of gall-bladder or bile-ducts, usually combined with drainage of the peritoneal cavity; (2) drainage of the peritoneal cavity alone, with or without exposure of the pancreas, by tearing through its covering of peritoneum; (3) incision into and drainage of the pancreas through the abdominal wound with or without the two previous procedures.

Results.

Following the scheme outlined above we find the results as follows:—

GROUP 1.	*Gall-stones Present.*		*2. Absent.*	
	R.	D.	R.	D.
Drainage of gall-bladder or bile-duct	12	9	4	1
Drainage of peritoneal cavity	3	0	9	3
Incision and drainage of pancreas	0	1	1	4
	15	10	14	8

R.= Recovered. D.= Died.

The total mortality of cases submitted to operation: 18 died and 29 recovered—i.e., 38·3 per cent. The total mortality of all cases (including four too ill for operation), 22 died and 29 recovered—i.e., 43·1 per cent.

[1] Waring and Griffiths: Brit. Jour. Surg., January, 1924.
[2] Barling: Brit. Med. Jour., April 28th, 1923.

In comparing the above groups we find the results of each operative procedure as follows:—

	R.	D.	Mortality.
Drainage of gall-bladder or bile-ducts	16	10	38·5 %
Drainage of peritoneal cavity	12	3	20 %
Incision and drainage of pancreas	1	5	83·3 %

In commenting upon the above results, although the mortality of drainage of the gall-bladder or biliary passages is high, yet it seems more reasonable to drain the biliary passages where definite pathological changes are found, especially if local conditions render this easy of accomplishment. It is well known that cases have occurred in which a stone is impacted in the ampulla of Vater, and which appears to be the actual cause of acute pancreatitis, and therefore, if stones are discovered, steps should be taken to exclude this possibility.

Distension of an apparently healthy gall-bladder is frequently found, and is to be expected under these circumstances, when the head of the pancreas is swollen and œdematous; therefore mere distension with no obvious pathological abnormality can rarely be considered an indication for cholecystotomy. The above figures indicate that the most favourable results are obtained by mere drainage of the peritoneal cavity. In most cases where this was the only operative procedure, evidence of cholecystitis was absent, and hence there was no indication for further interference.

One striking feature of these results is the poor prognosis in cases in which the pancreas was incised and drained. This is probably due to several reasons, of which may be mentioned: (1) incision of the pancreas favours local hæmorrhage and adds trauma to infection; (2) non-infected areas in the pancreas are exposed to infection, hence infection tends to become more widespread; (3) injury of the pancreatico-duodenal arteries may occur, interfering with the blood-supply of the duodenum, and cases of duodenal fistulæ have been reported after this procedure. Hence it appears that in the light of our present knowledge the line of treatment commonly indicated is peritoneal drainage, the peritoneum over the pancreas being first incised, it being advisable to bring the drainage-tube out through a separate puncture rather than through the laparotomy wound, owing to risk of the wound breaking down as a result of the action of pancreatic enzymes.

Suprapubic drainage may reasonably be added in cases of widespread infection. If gall-stones or other evidences of cholecystitis are present, then cholecystotomy should be combined with the above if the general and local conditions are satisfactory.

Recently it has been advised to secure retroperitoneal drainage of the pancreas by means of a subcostal incision in the left loin, which has the advantage of obviating the risk of peritoneal infection by manipulation and drainage-tubes. This line of treatment is supported by the above statistics, which suggest that in the absence of a diseased gall-bladder, peritoneal drainage gives good results; therefore, if the patient is sufficiently fit, and the gall-bladder appears to be healthy, the ideal treatment would appear to be closure of the laparotomy wound and the establishment of retroperitoneal drainage.

After-treatment.

Owing to the well-known effect of pancreatic discharges on tissues with which they come in contact, immediate protection should be afforded to the wound by means of some mineral fat. The puncture wound for the drainage-tube should be kept separate from the laparotomy wound. In two cases of this series re-suture of the laparotomy wound was necessary, and in other cases it was noticed during convalescence that the wound bulged, ventral herniæ subsequently developed. As a result of the general infection of the pancreas, and consequent alimentary disturbances, pancreatised food or some form of artificial pancreatic secretion should be administered as long as necessary.

Although uncommon, glycosuria occasionally persists after an attack of acute pancreatitis, in one case amounting to 2·5 per cent. one month after operation. Possibly chronic pancreatitis had previously depressed the islands of Langerhan's and predisposed to acute infection. Hence, possibility of glycosuria as a sequelæ should be borne in mind, and, if necessary, suitable medical régime instituted.

After-results.

It has already been indicated that this condition is one which tends to be recurrent and frequently progressive, the subsequent attacks commonly increasing in severity. In the case previously outlined the fourth definite attack was fatal, and in cases which recover with surgical assistance one would expect to find that, as the cause of the condition is incompletely understood, and, therefore, presumably continues, recurrences are likely to occur.

In one case of the series a recurrent attack occurred while a patient was still in bed, 22 days after cholecystotomy had been performed. The pain had been so severe that morphia was necessary. Reference has already been made to a case which returned from convalescent home with a further and fatal attack of acute pancreatitis.

Twenty-eight cases with at least one year's interval after operation have been traced, and evidence obtained regarding their after-history. Of 25 conclusive histories, no less than 16 suffered from subsequent attacks. Obviously the same fallacy exists in obtaining information regarding previous attacks, in that the patient may mistake pancreatic pain for pain of other origin. This danger was recognised and obviated as far as possible, and the characteristics of pancreatic pain are such that once actually experienced its subsequent recognition is probable. Again, in two cases in which cholecystectomy was performed typical attacks of pancreatic pain recurred, and in these cases pain due to cholecystitis or gall-stones were excluded.

Summarising the after-histories we obtained the following results:—

	Gall-stones Present.	*Absent.*
Recurrent attacks	13	3
No recurrent attacks	3	6
Inconclusive	2	1

The above figures are merely sufficient to suggest one or two features, perhaps the most striking is that the majority of cases of acute pancreatitis tend to relapse, and subsequent attacks are to be expected. Also the risk of these subsequent attacks appears to be greater when associated with cholecystitis as indicated by the presence of gall-stones, suggesting that when once pancreatitis infection is established infection of the biliary passages predisposes to reinfection of the pancreas.

Summary.

(1) Acute pancreatitis is a progressive condition, less severe attacks are frequently unrecognised, but the condition tends to culminate in an abdominal catastrophe.

(2) Drainage of the pancreatic region appears to be the essential line of treatment if pathological condition of the gall-bladder are present, then cholecystotomy may be performed as well. In suitable cases retroperitoneal drainage would be expected to give good results. Incision and drainage of the pancreas is not to be recommended.

(3) Immediate care should be taken to protect the wound after operation, and drainage-tubes should be inserted through special puncture wounds.

(4) Recurrence of attacks is to be expected, particularly when pathological conditions of the gall-bladder are present.

In conclusion, I must thank various members of the staff of the London Hospital for permission to include among statistics cases under their charge.

ULTRA-VIOLET RADIATION IN CŒLIAC DISEASE.*

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LITTLE of clinical value has been hitherto added to the original description of cœliac disease by Gee in 1888. The essentials of the following case may best be shown by reference to the weight chart here given and to the details of the condition present in July, 1923.

At the age of 6 years the child weighed 29 lb. only—i.e., the equivalent of a child of 2 years. Her height was 41 in., and body-height 22¾ in.

Absence of organic disease, an abdomen enlarged to a circumference of 20 in., a clean tongue and capricious appetite, five or six whitish fatty stools daily containing 46 per cent. of total fat of the dried material, and its onset at the age of 3 years established the diagnosis of cœliac disease, the child having been born at full term, 7 lb. in weight, and subsequently breast fed for ten months.

Subsequently attacks of colic, vomiting, and diarrhœa occurred, and an anæmia in January, 1925 (R.B.C., 3,500,000, Hb 70 per cent., and C.I. = 1), was demonstrated.

Apparently the disease is very seldom fatal, and the symptoms pass off during the later years of childhood; growth occurring to fair stature with freedom from symptoms on an ordinary diet.

Types of the Disease.

Two types of the disease are described: (1) The diarrhœic, where the stool resembles that of sprue, large, pale, and offensive, with fat as fatty acid. (2) Non-diarrhœic, where the stool is formed, coloured, and not offensive, with fat chiefly in form of soaps.

Post-mortems of other cases show no wasting of the intestinal mucous membranes or of Leiberkühn's follicles, and no ulceration, and usually the liver is normal in size or slightly enlarged, and the pancreas normal.

Theories of Causation.

Various theories of origin are cited. Against that of enteritis is the absence of intestinal ulceration, and against that of pancreatic deficiency, the following facts: 1. Fat splitting may be detected in fæces, up to 80 per cent. of total fat. 2. No muscle-fibres can be found in the stools. 3. Loewi's sign is negative. 4. No changes are found in the gland at post-mortem.

As regards urinary diastase, this on April 19th, 1925, was 4 units only (the normal being 10–20 units), and again on April 2nd, 1926, one year later, 5 units. In this particular case, however, the fat estimation would suggest a pancreatic deficiency, since the great part of the total fat remained unsplit into glycerine and fatty acids.

—	September, 1923.	November, 1924.	October, 1925.	April, 1926.
	%	%	%	%
Total fat	46	23	59·64	21·37
Split fat	6	10	48·7	17·81
Unsplit fat	40	13	10·94	3·56

It will, however, be noticed that whereas in October, 1925, the majority of the fat was being split, yet the child was persistently losing weight, which is strongly suggestive that the condition was one of an inability to absorb fat, rather than of a pancreatic deficiency.

In support of his theory of a "Defective Excretion of Bile Salts," Dr. Reginald Miller[1] has declared that "cœliac disease is a digestive fault and not an organic disease. Of the glands concerned in fat digestion, the *liver* seems under chief suspicion." And again—

"We know that the disorder is not due to a persistent inhibition of the bile flow, but speaking for myself only, I think it not unlikely to be due to some abnormality in bile salts secretion. . . . I give courses of bile salts, which in many cases lead to an increased absorption of fat."

* A paper read before the Devon and Exeter Medico-Chirurgical Society.

Course and Treatment of the Case.

In this case sod. glycocholate, gr. i., t.d.s., were administered in January, 1924, without any advantage, but from February to June, 1925, Parke, Davis and Co.'s "bile salts (gr. ½) and pancreatin (gr. iii.)," with sod. bicarb. (gr. xxx.), t.d.s., apparently proved beneficial until an epidemic catarrhal jaundice threw her back materially. Unfortunately, at this time it was impossible to make any investigation of liver efficiency.

Since 1913 Rowntree, Hurwitz, and Blomfield,[2] and later Sabatim,[3] Aaron, Beck and Schneider,[4] and Piersol and Bochus[5] in America, have been advocating hepatic efficiency tests by the use of phenoltetrachlorphthalein (or bromsulphalein), salts now used in the X raying of the gall-bladder. But, unfortunately, this would have necessitated the withdrawal of 8 c.cm. of blood from the child's vein and the injection of 20 c.cm. to 30 c.cm. of diluted dye washed in with a further 25 c.cm. of saline. Assistance was therefore sought from the *lævulose test.* This showed an increase at one hour of 25 mg., which, according to Spence and Brett[6] and de Wesselow,[7] might be evidence of diminished liver function. But this rise was not sustained, nor did lævulose appear in the urine.

The patient was given breakfast at 5.30 A.M., consisting of dried toast and a poached egg, and the test was commenced at 11 A.M. on April 2nd, 1925.

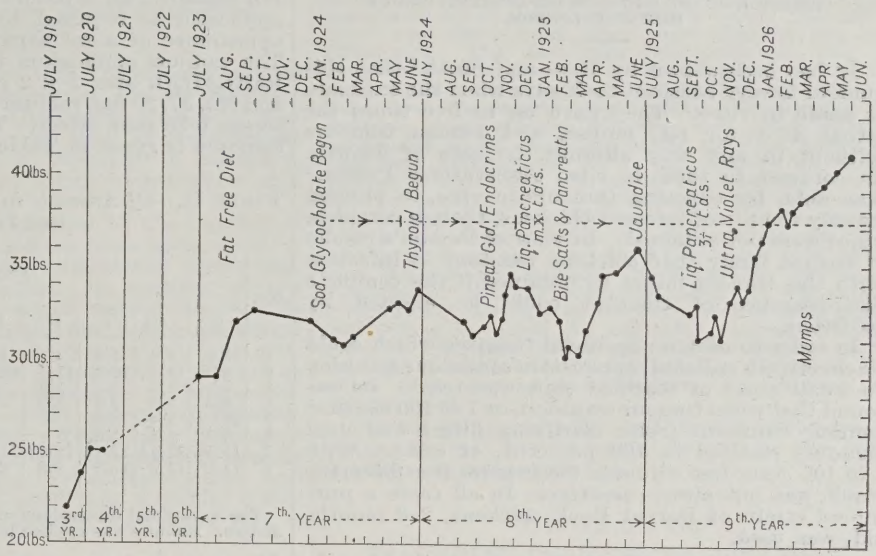
Blood.	*Urine.*
Before lævulose = 0·15 per cent.	Before lævulose—no reduction of Fehling's solution.
30 gm. lævulose given— ½ hour after = 0·137 % 1 ,, ,, = 0·175 % 1½ hours ,, = 0·153 % 2 ,, ,, = 0·146 %	No reduction of Fehling's solution in any of the specimens.

Therefore, because this lævulose test was indecisive and there was no marked improvement by giving bile salts, I personally think that the liver is not to blame. Nor is there in my opinion any endocrinal disturbance. Thyroid was harmful, and Carnrick's pineal gland comp., containing ant. pit., gr. 1/5; thyroid, gr. 1/8; adrenalin, gr. 1; ovarian, gr. 1 1/2; pineal, gr. 1/3, produced a transitory improvement but no more.

Before passing further I should like to lay stress on the capriciousness of the child's appetite. It has been written that the keynote of treatment is the diminution of the fat intake, and that thereby a wasted ailing being can be turned into a contented chubby child. But this was more easily ordered than enforced.

In December, 1923, there was severe anorexia, with refusal of all cooked meats. Again in February, 1924, she was so difficult to feed that all diet restrictions had to be withdrawn. Her tastes were for dry biscuits, greens, pickled onions, apple jam, butter and potatoes, milk and potatoes, liver and eggs, but no meat. Later in September, 1925, she would not eat "cooked" dinner, but only sausages, and 1½ pints of milk, with bread and butter. No eggs, meat, or fish. She preferred a dry biscuit. In view of this anorexia for protein, it was difficult to exclude fats entirely.

In cœliac disease there is said to be a deficiency of calcium in the blood, and tetany and late rickets may complicate it. Other observers have reported the ineffectiveness of treatment with calcium and parathyroid. Ultra-violet radiation, however, increases blood calcium. Moreover, Dr. Leonard Parsons[8] discusses the "value of irradiated cholesterol in rickets," and cites various workers and their theories for the changes produced in the cholesterol or the animal. For example, Drummond contends that the "growth vitamin" fat-soluble A is synthesised in the cholesterol, Rosenheim and Webster that the animal's own vitamin is "mobilised," and again Nelson and Steenbock that the light has increased



In the chart the words "ultra-violet rays" should align with October, 1925.

But this rise was not sustained, the antirachitic factor in the animal's tissues themselves.

Whatever occurs ultra-violet radiation was of definite value in this particular case. Treatment was commenced on Oct. 24th, 1925, from which date the child persistently gained in weight and physique. The continuation notes are appended.

24/10/25: Ultra-violet ray daily for a week, and then three times weekly under a mercury-vapour lamp.

20/11/25: Not disturbed at night for last two weeks. Bowels open, 1 per diem. Eating well (oatmeal, bread and butter, milk + +).

4/12/25: No diarrhœa or vomiting for two weeks.

8/1/26: Height, 41½ in.; body-height, 23 in.; circumference of head, 18⅞ in. No chilblains for first time. Taking cream.

14/3/26: Mumps—without set-back.

12/4/26: Urinary diastase = 5 units. Blood count = R.B.C., 5,300,000 per c.mm.; Hb, 70 per cent.; C.I., 0·7; leucocytes, 6200.

16/4/24: Height, 42½ in.; body-height, 23½ in.; circumference of head, 19 in. "She goes and helps herself to the milk." Potatoes and butter, jam + +, oranges, apples, bananas.

I think, therefore, I am justified in this case in concluding that *post hoc* is *propter hoc.* It is extremely regrettable that the blood calcium was not estimated in this case. As an explanation, however, I would submit these two theories: 1. The ultra-violet rays have proved beneficial by improving the calcium metabolism in some way, rendering the fats more readily assimilable as soap by the lacteals. 2. That the rays develop in the child's tissues a vitamin which renders the fat capable of absorption. For, whereas she refused milk in any quantity, the source of fat-soluble A, now she does not seem to be able to drink and eat enough milk and butter, of which she daily consumes three quarts and half a pound respectively.

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THE EFFECT OF β RADIATION ON ROUS CHICKEN TUMOUR.

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IT has been shown by Russ and Scott [1] that this tumour is very resistant to X rays when the exposure is made in vitro. They gave up to five times the lethal dose for rat, mouse, and human tumours without in any way altering the rate of growth. In contrast to these in vitro observations Peyron [2] was able, by exposing tumours in vivo, to prolong greatly the life of infected chickens, though complete cures were not obtained. In view of Peyron's results it seemed likely that chickens resistant to infection with this tumour might be obtained if the complete disappearance of tumours could be effected by radiation.

In order to obtain superficial tumours which could be effectively radiated, application of tumour emulsion to small areas of scarified skin was tried. It was found that when tumour emulsion, or 1 in 100 clarified tumour emulsion (Seitz clarifying filter) was used tumours resulted in 100 per cent. of cases. With 1 in 100 germ-free emulsion (Seitz germ-free filter) the result was not always positive. In all cases a pure inbred strain of Barred Rock chickens, 2–3 months old, was used.

TABLE I.

No.	Days.	Experiment.	Result.
1	0	T. E. to Sc. right side.	+ 7th day.
	7	Radiation 1 hr., applic. No. 4	Disap. 25th day.
	19	T. E. to Sc. right side.	Negative.
	34	T. E. to Sc. left side.	,,
2	0	T. E. to Sc. right side.	+ 8th day.
	10	Operation tumour removed.	Recurred 27th day.
	27	Radium to recurrence ¾ hr., applic. No. 57.	Disap. 48th day.
	49	T. E. to Sc. left side.	Negative.
	62	T. E. to Sc. right side.	,,
3	0	T. E. to Sc. right side.	+ 5th day.
	4	Radiation 1½ hrs., applic. No. 4.	Disap. 14th day.
	12	T. E. to Sc. right side.	Negative.
	25	E. T. to Sc. left side.	,,
4	0	T. E. to Sc. left side.	+ 6th day.
	10	Radiation 2 hrs., applic. No. 4.	Disap. 20th day.
	21	T. E. to Sc. left side.	Negative.
	38	T. E. to Sc. right side.	,,
5	0	T. E. to Sc. right side.	+ 7th day.
	7	Radiation 1½ hrs., applic. No. 4.	Disap. 14th day.
	19	T. E. to Sc. left side.	Negative.
6	0	T. E. to Sc. left side.	+ 10th day.
	11	Radiation 2 hrs., applic. No. 4.	Disap. 17th day.
	21	T. E. to Sc. left side.	Negative.
	32	T. E. to Sc. left side.	,,
7	0	T. E. to Sc. right side.	+ 8th day.
	13	Operation, tumour removed.	Recurred 23rd day.
	23	Radium to recurrence 1 hr., applic. No. 4.	Disap. 35th day.
	49	T. E. to Sc. left side.	Negative.
	71	T. E. to Sc. right side.	,,
8	0	T. E. to Sc. right side.	+ 12th day.
	12	Radiation 2 hrs., applic. No. 4.	Disap. 42nd day.
	42	T. E. to Sc. left side.	Negative.
	60	T. E. to Sc. left side.	,,

T. E. = Tumour emulsion. Sc. = Scarified.
Disap. = Disappeared.

As a preliminary the effect of removing the tumour by operation was tried, as by this means, apart from radiation, a condition of immunity might follow the temporary growth of the tumour. It was found that the removal of a tumour by operation does not render the chicken resistant. The effect of radiating the cutaneous tumours was next tried. The results are given in Table I. It is seen that β radiation causes the disappearance of the tumours, the dose required being not much greater than that required to cause the disappearance of Jensen's rat sarcoma. For instance, an exposure of 40 minutes to the No. 4 applicator is required to cause the complete disappearance of a rat sarcoma measuring 5 × 5 mm. The radium applicators used were No. 4, 110 mg. $RaBr_2 4H_2O$, area 2 × 2 cm., screen 0·12 mm. silver and No. 57, 20 mg. radium element, area 15 × 15 mm. screen 0·35 mm. silver. The growth of the radiatep tumours is given in Table II. Apart from radiation these cutaneous tumours have not been observed to disappear; they grow rapidly, spread to the subcutaneous tissues, and lead to metastases in the viscera. These animals, in which tumours had disappeared following radiation, were rescarified twice with negative result, controls being positive in each case.

TABLE II.—*Of Animals in which Tumour Disappeared (see Table I.).*

No.	Days—									
	0	3	7	10	14	17	21	24	28	31
1	8/5	6/4	5/3	4/4	4/4	Nil	—	—	—	—
2	6/5	11/7	12/7	11/7	10/8	6/4	Nil	—	—	—
3	5/5	5/5	4/3	Nil	—	—	—	—	—	—
4	6/5	3/3	2/2	Nil	—	—	—	—	—	—
5	12/5	4/4	Nil	—	—	—	—	—	—	—
6	4/3	3/3	Nil	—	—	—	—	—	—	—
7	15/9	21/11	23/11	25/14	27/16	25/16	23/16	21/12	16/7	Nil
8	11/6	11/9	12/9	9/8	9/8	10/8	9/8	9/8	4/4	Nil

The superficial dimensions of the tumours are given in millimetres. Radium was applied in each case after the first reading.

Discussion.

The great difference in sensibility to radiation according to whether it is radiated in vitro or in vivo has not been recorded for any other tumour. The resistance to radiation in vitro is probably associated with the fact that this tumour can be propagated by cell-free filtrates. Sections of radiated tumours show that the tumour cells are destroyed in the usual manner, but why the infective agent which is presumably not destroyed by the radiation does not infect the surrounding tissues is unknown. The question as to whether after radiation in vivo the tumour loses its power to infect by a cell-free filtrate cannot as yet be answered. In these experiments three tumours were used, one from Dr. Gye and two from Dr. McIntosh, all of which gave rise to tumours with cell-free filtrates. Further, they were from time to time tested to ensure that they had not lost this property. It may thus be concluded that though a tumour in a patient be easily destroyed by β radiation, it may nevertheless be of a kind which could be propagated by a cell-free filtrate; the effect of radiation in vivo on it is no criterion.

Conclusions.

1. Rous chicken tumours capable of infecting by cell-free filtrates can be destroyed by β radiation.

2. The dose acquired is not very different from the dose required to destroy mouse and rat tumours, and is very much less than that required to destroy Rous tumour by means of X rays applied in vitro.

3. Chickens in which tumours have been made to disappear by β radiation exhibit resistance to subsequent infection.

This research was carried out under a grant made by the British Empire Cancer Campaign. Some of the radium used was on loan from the Medical Research Council.

[1] Russ and Scott: THE LANCET, August 21st, p. 374.
[2] Peyron: Comp. Rend. Soc. Biol., Paris, 1923, clxxvii., 1341.

Clinical and Laboratory Notes.

ALKALOSIS.

TREATMENT BY AMMONIUM CHLORIDE PER RECTUM AND CONCENTRATED SODIUM CHLORIDE INTRAVENOUSLY.

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IN THE LANCET of Oct. 16th, 1926, in an article on Before and After Operation, by Sir Berkeley Moynihan, the subject of alkalosis is dealt with, and the treatment suggested is that of intravenous injection of normal saline, repeated if necessary, and the administration of dilute hydrochloric acid by the mouth.

The line of treatment indicated by the heading of this article is one which I have been using for over a year now in all cases of intestinal obstruction with very successful results. It consists of the administration of 3 drachms of ammonium chloride in 5 or 6 oz. of water per rectum just before operation; and of the administration of 10 oz. of a 15 per cent. solution of sodium chloride intravenously as soon as the patient is put under the anæsthetic. The stomach is, of course, always washed out previous to administration of the anæsthetic. Even after prolonged intra-abdominal manipulations the patients usually go off the table with most satisfactory pulse, and at one's visit next day a word that generally comes from their lips, on being asked how they feel, is "champion."

The rationale of the treatment appears to be that there is such a loss of HCl to the system by vomiting that the chlorides are seriously depleted, and require replenishing. This is supplied by both the salts used, but the ammonium may have some further beneficial action on the liver chemistry. As regards the use of so concentrated a solution of sodium chloride, it may be that its beneficent action is in part due to it being so concentrated, and so preventing an exosmosis of plasma salts into the intestinal tract, much the same as hypertonic saline acts so beneficially in the treatment of cholera.

The only drawbacks to this line of treatment are: (*a*) marked thirst, which, however, helps in flushing the system with plenty of fluid; (*b*) sometimes anuria may be accompanied by severe diarrhœa, but which are not of long duration; (*c*) thrombosis of vein used for the injection. This does not seem to cause any trouble.

Two recent cases, both of severe intestinal obstruction from abdominal tuberculosis, will serve to illustrate its use.

Clinical Records.

CASE 1.—Male, aged 30, admitted to hospital with pain over appendix area, vomiting, and signs of obstruction. Treatment as above given. Stomach washed out (contents being large amounts of brown offensive fluid). Operation revealed extensive abdominal tuberculosis, most marked in the ileo-cæcal region, but with adhesions involving most of the neighbouring coils. The bowel already looked purplish, and the adhesive bands in this area were sloughing. A cæcostomy was done, as the condition of the patient did not allow of anything further, and the outlook was not hopeful. Afterwards the patient's condition improved considerably, and his cæcostomy acted, while his colon was relieved by enemata. Some 10 to 14 days after, the cæcostomy refused to operate, gentle irrigation refused to bring anything away, and the patient began to complain of more pain. There was no vomiting, however, until after administering of 5 grains of calomel without its having any effect via the cæcostomy. It was decided to reopen the abdomen. After preliminary washing out of stomach, giving of ammonium chloride and concentrated sodium chloride, the abdomen was opened, and the collapsed small bowel was traced up to where another band strangled the bowel. Above this the small gut was dilated to the size of a dilated colon, was full of fluid, and quite inert. The bands were cut, the fluid milked down the gut, and a jejunostomy performed. Sterile paraffin was passed over the raw surfaces left from breaking down of adhesions. Next day the patient was in wonderful condition, his only complaint being of great thirst. The jejunostomy drained away pints of dark brown fluid for days, and was used to feed him with 0·5 per cent. sodii bicarb. solution and 5 per cent. glucose. It was some days before the cæcostomy acted again, and only after the continued use of pituitary and eserine. Thereafter convalescence was uninterrupted.

CASE 2 was that of a man, aged 25, admitted to hospital with signs of intestinal obstruction. His previous history was to the effect that he had undergone two abdominal operations for obstructive symptoms, when bands were found and enlarged glands noted. The last of these was three years ago, since when he had kept quite well. His face was very pinched, and he complained of a great deal of abdominal pain. The same routine was observed; stomach washed out, am. chlor. and concentrated NaCl given. On opening the abdomen very extensive adhesions were found all over, particularly on the right side of the abdomen, where one band was kinking the bowel very tightly. It seemed hopeless to try to deal with all the adhesions and cover all the raw surfaces left. A jejunostomy was done, sterile paraffin passed all over the raw surfaces, and a drainage-tube lodged suprapubically. The jejunostomy was to be used to wash out the upper tract four hourly with 0·5 per cent. sodii bicarb. solution. Next day the patient felt "champion," and had a splendid pulse. It was noticed, however, that each time he was washed out or had a glucose feed with sodii bicarb. he was sick, bringing up bilious material. Thinking this might be some remains of the alkalosis, I advised the use of saline and glucose, after which there was no more sickness, and progress was uninterrupted.

The use of normal saline and glucose intravenously seems to find a very useful sphere in the allied condition of intussusception.

A NOTE ON THE BACTERIAL CONTENT OF ICE-CREAM.

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THIRTY-FIVE samples of ice-cream, taken from various sources and exposed for sale in London, were examined in the hot period between July 16th and August 16th this year. The investigation was limited, and was undertaken only to obtain a general idea of bacterial contamination with reference to the number of organisms and the presence of coliform organisms, *B. enteritidis sporogenes* and streptococci.

Bacterial Count.—The number of colonies growing on agar at 37° C. for 24 hours :—

2	samples	showed	under a million per c.cm.					
6	,,	,,	between 1	and	10	million	per	c.cm.
9	,,	,,	,, 10	,,	50	,,	,,	,,
3	,,	,,	,, 50	,,	100	,,	,,	,,
10	,,	,,	,, 100	,,	1000	,,	,,	,,
5	,,	,,	over 1000 million per c.cm.					

(2 of these were uncountable in a one-millionth dilution.)

Coliform Organisms.—The minimal amount showing the presence of acid and gas in litmus bile-salt lactose broth in 24 hours at 37° C. :—

4	samples	showed	acid and gas	in	1	c.cm.
8	,,	,,	,, ,,	,,	0·01	c.cm.
9	,,	,,	,, ,,	,,	0·0001	c.cm.
2	,,	,,	,, ,,	,,	0·00001	c.cm.
11	,,	,,	,, ,,	,,	0·000001	c.cm.

1 sample showed no acid or gas in 1 c.cm. or less amount.

B. enteritidis sporogenes.—Minimal amount showing acid and torn clot in litmus milk. The ice-cream was heated to 80° C. for ten minutes and cultures grown anaerobically for three days at 37° C. :—

6	samples	gave	positive results	in	1	c.cm.
2	,,	,,	,,	,,	,, 0·1	c.cm.
6	,,	,,	,,	,,	,, 0·01	c.cm.
3	,,	,,	,,	,,	,, 0·001	c.cm.
1	sample	,,	,,	,,	,, 0·0001	c.cm.
17	samples	,,	,,	,,	,, 0·00001	c.cm.

(Dilutions were not taken higher than 1/100,000.)

Streptococci were found to be present in 1 c.cm. of 26 samples; 9 of these were of a long-chained variety.

It should be stated that the samples were put up for culture within an hour of collection, but were not transmitted in ice; but even allowing for this, the figures appear to be excessive for a food fit to be consumed. The United States Department of Agriculture Bureau gives as an average a bacterial count of 38 millions per c.cm. in the summer months.

Of this series, 33 (two being uncountable) gave an average of 969 million per c.cm. It was noted that the two samples giving the lowest counts, which were 200,000 and 600,000, were wrapped in paper, and that those with the highest were from the street barrow, where the ice-cream tub has the greatest exposure to street dust, and the large spoon is usually kept in "clean" water. Presumably the ice-creams of this series were consumed by many London children, yet no epidemic of food poisoning actually attributed to ice-cream seems to have been reported during that period; so that these ice-creams, many of them practically bacterial cultures, were eaten without any apparent ill-results from a public health point of view.

Probably none of these organisms are directly pathogenic in the healthy alimentary tract of a child of school age, or possibly children early acquire a high degree of immunity to such as *B. enteritidis sporogenes;* but it must be admitted that the chance of virulent types of organisms—e.g., a virulent type of *B. coli*—obtaining access to ice-cream is great. Similarly, organisms of the Gaertner Salmonella group, from dust and flies, &c., may possibly occur in ice-creams sold from open receptacles in the street.

It appears to be worth while considering (apart from acute food poisoning) whether or not contaminated foods taken in childhood sometimes permanently alter the normal intestinal flora so as to lead to alteration of intestinal digestion and absorption, resulting in later life in puzzling toxæmias and diatheses.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

COMBINED SECTIONS OF OTOLOGY, MEDICINE, AND NEUROLOGY.

BLOOD PRESSURE AND EAR DISEASE.

AT a meeting held on Dec. 3rd Dr. DAN MCKENZIE (Otology) took the chair, and a discussion on the relation of abnormalities of the blood pressure to diseases of the ear was opened by the reading of a paper by Sir WILLIAM MILLIGAN (Otology). The vascular supply of the internal ear, he said, formed a closed circulation, the blood being carried away by means of three veins. A study of these vascular arrangements showed that one segment of the auditory scale could be put out of action—e.g., from embolism or atheroma—without other segments being involved. The full brunt of a pathological storm was liable to occur in the cochlea or the vestibulo-canalicular systems, or both. The auditory was the most sensitive of all the cranial nerves, and hence it very readily responded to variations of arterial pressure unaccompanied by any organic lesion. There was, however, in the matter of blood pressure a wide range of normality. A patient frequently came to the aurist because of some local disturbance such as tinnitus, which might be due not to the ear but to a general circulatory upset. This symptom might result from a blood pressure either higher or lower than normal, and it was generally bilateral. But it might be due to a local organic lesion of the ear, and then would most likely be unilateral. In such cases he advocated a closer coöperation between aurist and physician. A rushing tinnitus might be the first danger-signal of high pressure. Many transient vertiginous attacks in persons with high blood pressure were due, he thought, to arterial spasm, causing labyrinthine anæmia. In the rare condition of true Ménière's disease both the static and the acoustic segments of the ear were to some extent disorganised. But there might be a vestibular symptom-complex without loss of hearing, the so-called pseudo-Ménière's disease, a term he would gladly see abolished. Attacks of the kind under discussion were frequently induced by worry and hurry, often accompanied by over-indulgence in tobacco. Repeated vertiginous attacks of labyrinthine type coming on after sudden head movements and unaccompanied by deafness were frequently the forerunners of fatal angina pectoris. Subnormal arterial pressure, such as in severe anæmia, neurasthenia, phthisis, influenza, and diphtheria might result in temporary loss of hearing, tinnitus, and vertigo, owing to venous stasis in the internal ear. Primary disease of the internal ear was comparatively rare. After excluding suppurative conditions, when the clinical symptoms suggested disease of the internal ear, a detailed examination of heart, kidneys, and intestinal tract should be made, and the blood pressure measured. Tinnitus and vertigo were, in many cases, danger warnings of organic disease in regions remote from the ear.

Dr. LEWIS A. SMITH (Medicine) said there seemed to be a large range of blood pressure which was consistent with the performance of very good work, for people with a systolic pressure of 180, or even 200, carried on very efficiently. Folk complaining of deafness did not consult the general physician, but those having vertigo frequently did. Analysing 50 cases among his own patients, with a systolic pressure of 200, he found that only 10 complained of vertigo or giddiness, though they confessed to abnormal feelings in the head. Among 20 adult people with low pressure (100 to 110 systolic) only four complained of vertigo or giddiness. Most of those who did complain of vertigo showed great differences between the systolic and the diastolic pressures. Sometimes a complex cause was at work, as in a recent case of his own, in which there were very hard arteries; 1½ oz. of strong tobacco was being smoked daily, and definite albuminuria was present. Taking 50 patients who complained of vertigo, 15 were neurasthenics, 13 had cardio-vascular troubles, 8 indulged in tobacco (notably cigarettes) to excess; gastro-intestinal cases numbered 6, in 4 the vertigo was aural in origin, in 2 there was epilepsy, and gross anæmia was present in 2. In 37 of these 50 the blood pressure was normal. Blistering over the mastoids, with bromides and luminal internally, proved helpful in relieving the vertigo.

Dr. W. J. ADIE (Neurology) took the view (partly, he said, to provoke discussion) that there was no direct relation between abnormalities of the blood pressure and ear disease. Vertigo as a symptom, apart from ear disease, could be dismissed at once, as it accompanied so many conditions. But he did not agree with the statement in a well-known text-book that tinnitus did not occur in association with central lesions. He had never seen or heard of a case in which a central lesion produced deafness. The only certain symptom of ear disease, he contended, was deafness. Patients with high blood pressure often had small strokes, from which they recovered, but these were not caused by the high pressure; they resulted from narrowing or thrombosis of cerebral vessels, as a result of associated arterial changes. There was too much readiness, he thought, to correlate the state of the blood pressure with certain symptoms. Degenerative changes in the ear might occur coincidently with sclerotic processes in other organs, or they might be secondary to arterial disease.

Discussion.

Mr. G. J. JENKINS also expressed his difficulty in arriving at a proper criterion of normal blood pressure. When the pressure of a person was very high his efficiency might be good, though his life might be in danger. The auditory and vestibular symptoms and signs might be only part of the manifestations of unusual blood pressure, whether high or low. In the case of people with arterio-sclerosis, the taking of a hot bath would often cause tinnitus, vertigo, vomiting, and headache of severe degree. It was not possible to determine whether the lesion was labyrinthine or intracranial. He did not think that even a very high systolic pressure would produce

ear symptoms; there was a class of cases in which the blood pressure was continuously high to compensate for the diseased condition of the vessels. Often there was also evidence of disease of the labyrinth. When deafness, tinnitus, and vertigo were severe, nearly always one labyrinth was more affected than the other.

Dr. J. A. RYLE spoke of the need for distinguishing between giddiness or dizziness and genuine vertigo. Of 90 of his patients with high blood pressure only 4 had genuine vertigo, with nausea, instability, and the sensation of objects revolving. Of 18 cases of real vertigo, 11 had normal or subnormal pressure, 7 had high pressure for their age. Four of these last seven had also unilateral deafness or tinnitus, which suggested the existence of local changes.

Mr. A. R. TWEEDIE thought it well to remember that, in regard to its static properties, the human ear was a degenerating apparatus, certainly compared with that of the dog; people were constantly engaged in disregarding noises which interfered with work or comfort. Vertigo did not owe its occurrence to one uniform cause; it arose from a conspiracy of causes—fatigue, vasomotor disturbance, neurasthenia, aural asymmetry.

The discussion was continued by Dr. SALISBURY SHARPE, Dr. A. ABRAHAMS, Sir JAMES DUNDAS-GRANT, Mr. E. B. BARNES, Mr. E. WATSON-WILLIAMS, and the PRESIDENT. Dr. SMITH briefly replied.

SECTION OF ORTHOPÆDICS.

AT a meeting of this Section held on Dec. 7th Dr. W. GORDON PUGH, the President, took the chair, and Mr. S. L. HIGGS opened a discussion on the treatment and results of

Fractures of the Upper End of the Femur in Adults.

Fractures of the shaft were excluded from the scope of the discussion. Most attention, said Mr. Higgs, would doubtless be given to fractures of the femoral neck, as this accident not only endangered life but was likely to lead to severe crippling Older writers considered that treatment of these cases was almost hopeless, and that non-union was inevitable unless impaction had taken place at the time of the injury. The recent literature on the treatment was mainly American and continental. Mr. Higgs felt sure that the present routine methods of treatment were very unsatisfactory. He submitted that there were five types: (1) subcapital, (2) transcervical, (3) intertrochanteric, (4) pertrochanteric, and (5) subtrochanteric. The first two were fractures of the neck proper, and therefore always passed into the joint. The subjects were mostly old people, and the accident was the result of indirect violence, but cases were seen at all ages. Usually the fracture was not comminuted, and only loosely, if at all, impacted; its manipulative reduction was fairly easy. Commonly a painful pseudarthrosis was left. The other types (3, 4, and 5) might involve the neck of the femur, but only at the base; the sufferers were generally younger people, and direct violence was the cause. Comminution was the rule, and impaction was common. Firm bony union was the usual sequel.

It was the results of treatment of the cases of fracture of the neck proper which were so unsatisfactory, continued Mr. Higgs. Among factors which predisposed to non-union were structural changes in bone associated with old age, interruption of the vascular supply, the presence of synovial fluid, lack of apposition of the fractured surfaces, and difficulty in immobilisation. In assessing the value of various methods of treatment used for this type of fracture, he gave a word of praise to Whitman's method of abduction and fixation in plaster. Extension, wide abduction, and internal rotation reduced the deformity and brought the bony surfaces into contact. The bone had united in five of his cases treated by this method.

Operations devised for treating ununited fractures of the femoral neck came, he said, under two heads: (1) those undertaken to promote union of the fracture, (2) those in which the mechanism of the joint was reconstructed. These Mr. Higgs discussed in considerable detail. His paper ended with the following general conclusions: (1) Fractures of the upper end of the femur, excluding those of the neck proper, readily united, and ordinary extension methods, as in fractures of the shaft, were satisfactory. (2) Fractures of the neck of the femur must be treated on quite different lines to get good results. It was useless to employ the usual extension methods in these cases. Wide abduction, with fixation in plaster, should be used as a routine. Most cases so treated resulted in firm union, whatever the patient's age. The additional fixation given by inserting a bone-graft might, he thought, lead to more good results, but the operation was too highly specialised to be used generally. (3) For ununited fractures of the femoral neck operative treatment was advisable if the general condition of the patient was such as to permit of it. The kind of operation would depend on the degree of absorption of the neck and the condition of the articular surfaces. Refreshing the fractured surfaces, either with or without the insertion of a bone-graft, was indicated in cases in which the restoration of the anatomy of the hip-joint was a practical proposition. In other cases reconstructive operations would restore stability to the joint and relieve the pain.

Discussion.

Mr. E. W. HEY GROVES said that surgeons were agreed on the general principles governing the treatment of these cases, but a large proportion of bad results occurred in the practice of those who were not specially interested in the treatment of fractures, or who chose to leave such cases alone, hoping either to forget them or that they would be lost sight of. Among the causes of non-union he thought that Mr. Higgs did not lay sufficient stress on interposition of the capsule. In perhaps three-fourths of the cases he had seen there was a definite interposition of fibrous tissue which, he did not doubt, was derived from the reflected portions of the capsule. Though its removal was not necessary for a functionally good union, he thought that its presence militated against rapid bony union. He agreed with all that Mr. Higgs had said about the futility of the so-called extension method, which could not be too strongly condemned. He also agreed as to the enormous superiority of the Whitman abduction plaster, but even that gave 50 per cent. of poor results. It was impossible to foresee exactly which case would result in non-union until the most favourable time for treatment had passed, and he was therefore against this method being regarded as the routine one.

Mr. Groves did not agree with Mr. Higgs about bone-graft, and bone pegs, and contended that there was no advantage in bone-grafting which was not at least equalled by pegging; grafting, moreover, meant that considerably more time was taken in the operation. Pegging, he thought, should be the routine hospital treatment of fracture of the neck of the femur. In cases of subcapital fracture, where the upper fragment was very small, it was easy, by doing an anterior arthrotomy, to expose the upper fragment and dislocate it without separating it from its soft tissue connexions, and the head could be nailed into the neck. This ensured perfect apposition and the certainty of bony union. In 15 consecutive cases there had been a smooth recovery and firm bony union. In two cases there had been poor functional results, and a tendency to ankylosis in the joint, which he thought was due to atrophy of cartilage at the head of the bone; both patients were old. At what stage should a fracture of the neck of the femur be regarded as ununited? Not until 18 months or two years had elapsed was it thought necessary to adopt a different technique. If a reasonable amount of head remained, a restoration of head and neck, perhaps by a peg, was better, in his view, than any reconstructive operations.

Mr. R. C. ELMSLIE said that one surgeon never saw more than a small number of the cases under

discussion, and it was hard to gain experience of particular methods of operation. For some years it has been his practice to put on a hip-plaster with a long plaster spica, arranging for the patient to be slung by a Balkan frame. This facilitated nursing and tended to avoid bed-sores. He put a sling on either side of the pelvic part of the plaster, and attached the slings through pulleys to counter-weights. Mr. Higgs had said little about after-treatment. After an intracapsular fracture had been treated by plaster, should a calliper splint be put on for walking? He did not use a calliper splint now, as he believed that it forced the patient to walk with an abducted hip. He gave the patient walking exercises whilst lying in bed; then he got him up between two heavy chairs and encouraged him to take the strain on the affected hip by raising the pelvis on the opposite side. The wearing of a calliper splint was particularly a hardship to old and stout people.

Sir CHARTERS SYMONDS said that in the days before X rays were available he had taken a good deal of trouble in investigating the kind of cases now being discussed, and had been able to indicate two or three signs by which an extracapsular fracture could be distinguished from an intracapsular. He suggested that in extracapsular fracture of the impacted variety it was seldom necessary to do more than use a Hodgen splint and extension. In only one case of his own had it seemed wise to disimpact a fracture, and always it required great force to undo such a fracture. He had seen great advantages from the abduction method. With regard to open operation, in 1907 a boy had been brought to hospital with a fracture, and he had cut down from the front and undone the fracture with a chisel; after the leg was put up there had been a perfect functional result. He admitted, however, that this course would not always be wise. He thought the Liston splint was only a relic so far as extracapsular fractures were concerned; he did not think he had used it once during his 30 years at Guy's Hospital.

Mr. H. A. T. FAIRBANK said that he quite agreed that the results of treatment in cases of fracture of the neck of the femur were bad, and radiologists would admit they saw only few cases in which union had occurred. He thought abduction and plaster were not used in the right way. Abduction, he thought, should be left until the last, because abduction had the effect of locking the fracture, and it interfered with reduction. Internal rotation was also very important, and it should be carried out with considerable force for a long time, particularly if a long time had elapsed since the accident. He felt sceptical about any part of the capsule being nipped between the fragments, as mentioned by Mr. Groves. The decision as to operation must be influenced by the degree of atrophy of the head, and this atrophy, he held, depended on function. If there was a sufficiently sound fibrous union, or the fragments were sufficiently hitched together, so that the inner fragment performed a function when the patient began to get about again, the inner fragment was less likely to show marked atrophy. He thought an autogenous living bone-graft preferable to a peg.

Mr. W. ROWLEY BRISTOW said the figures at a large general hospital showed that the cases of true fracture of the neck of the femur admitted numbered, in 1921 and 1922 none, in 1923 two, in 1924 four, in 1925 eight, therefore it was of little use to speak of the general practitioner having had a chance of learning how to treat these fractures. He did not find any difficulty in treatment by Whitman's method, and he showed skiagrams of a case which was successfully treated by a general practitioner. Stiffness of the knee following fixation in plaster he had found to be a real trouble. When union failed at the end of 9 to 12 months the reconstructive method of Whitman seemed well worth a trial in ordinary cases; the shock was small, and it was not difficult to do.

Mr. W. MCADAM ECCLES said that there were two distinct varieties of fracture of the neck of the femur other than the subcapital and the transverse at the neck. There were cases in which the recurrent fibres of the capsule remained intact posteriorly, so that there was marked eversion, and a distinct separation of the two fragments anteriorly. But the fragments were held together with very little longitudinal displacement. By internal rotation followed by abduction and fixation, it was usually possible to ensure bony union. He questioned whether it was necessary to put the plaster as low down as below the knee. If it was put on the lower fourth of the femur passive movement of the knee was possible, and active movement later. When there was longitudinal deformity of the so-called intracapsular fracture a very serious condition resulted, and now that technique had improved he was coming to the view that this type of case would have to be treated by operation. He agreed with Mr. Groves that it was better to open a joint and see where the bone-graft or peg was going, rather than trust to the guidance afforded by X rays.

Mr. E. M. COWELL referred to the ambulance authorities' first-aid regulations requiring that these cases should be treated by extension and a Thomas splint immediately after the accident. After this the patient could be conveyed more comfortably to hospital, where he often arrived suffering very little pain.

Mr. A. H. TODD stated his opinion that the most important cause of failure to unite was lack of apposition of fragments. Reliance on a single antero-posterior radiogram of the region was a cause of much misinterpretation and therefore of mistaken treatment. The actual position of fragments in relation to each other could only be judged by stereoscopic pictures. Radiology must be regarded as an integral part of the first examination of a case. A surprising number of medical men felt they could be sure whether or not a fracture had united by a mere inspection of the radiogram. There was a good deal of erroneous teaching in regard to fractures of the neck of the femur. He used to be taught that the absorption taking place after fracture of the neck of the femur was principally that of upper fragments, whereas the absorption was in the neck, not in the head. It was now known that faulty treatment of these cases was the direct result of wrong tuition.

MANCHESTER MEDICO-CHIRURGICAL AND OBSTETRICAL SOCIETY.

A MEETING of this Society was held on Nov. 17th, when Mr. A. C. MAGIAN read a paper on

Insufflation of the Fallopian Tubes.

The method, he said, had been originally introduced by Rubin and afterwards simplified by Bonney and others. Rubin's figures for 1000 cases of sterility indicated that about 9 per cent. had been cured, but his own results had not been so good, partly, perhaps, because the cases had been more carefully selected. After many years of sterility a woman might have a child without any intervention; furthermore, the mere fact that the patient was under treatment for sterility might affect the intercourse of husband and wife. The information given to the gynæcologist was often inaccurate, and taking all these things into consideration he doubted whether insufflation could cure sterility in more than 2 per cent. of cases; in general the percentage was probably much lower. Cure could only occur where there was no more than a very fine obstruction in the Fallopian tubes. Insufflation would break down cobwebby adhesions and straighten out a slightly distorted canal, but that was all it could do with safety.

There was a good deal more to be said, continued Mr. Magian, for the use of insufflation in diagnosis, for with average skill and care it was possible to diagnose obstruction in the Fallopian tubes in a very large proportion of cases. It must only be used, of course, where no obvious or gross lesion could be

detected. The surgeon would not employ such a method if he suspected a pyosalpinx, for example, nor when there was the slightest doubt as to the presence of active gonorrhœa, nor when any form of sepsis could be discovered. Without due care septic particles might be blown right into the abdominal cavity with disastrous results. The vagina should be washed out twice daily for a few days, and just before insufflation it was well to paint the vagina and cervix with tincture of iodine. Precautions must be taken as for a major operation. Rubin had done his examinations without an anæsthetic, but this was inadvisable for the ordinary practitioner, as the operation might cause severe shock. Under open ether the cervix was dilated up to No. 10 Hegar, and a hollow sound was passed right into the uterine cavity, so that the internal os could grasp it tightly. The apparatus was also connected with a manometer, which accurately registered the pressure. Under ordinary conditions a pressure of 100 mm. would suffice to blow air through the patent extremities of the Fallopian tubes, but where there was obstruction a pressure of over 200 mm. might be needed; it was unsafe to go much further than this, and it was certainly risky to reach 250 mm. During insufflation the observer listened the whole time with a wide-mouthed stethoscope over the iliac regions for the faint rustling sound which showed that air was escaping through the fimbriated extremities of the Fallopian tubes. If one tube was obstructed, air would only be heard escaping on the other side, and the manometer would probably register at least 150 mm. If the manometer first registered, say, 200 mm. and then suddenly the pressure shot back to 100 mm., it was probable that there had been some slight obstruction in one or other of the tubes which had been broken down by the increased pressure. Where the tubes were diseased—e.g., pyosalpinx or hydrosalpinx—the air pressure in itself might, of course, burst the tube and cause peritonitis. By injecting a thick solution of barium or lipiodol into the uterus and then taking an X ray photograph, it was possible in a fair number of cases to determine the exact position of the obstruction. With obstruction at the isthmus there was not much chance of recovery by operation or otherwise, but if the block was at the fimbriated extremity it was quite likely that the condition could be cured. If it was in the middle of the tube, there was the possibility of making a new and efficient ostium. The injection of the emulsion was always difficult, and results obtained on the X ray plate were often rather unsatisfactory.

Dr. P. M. MILLIARD asked if insufflation could suitably be performed in the surgery of a general practitioner.

Dr. E. C. DUTTON inquired if the injection of lipiodol into the uterus was a safe procedure, and if the results were worth the trouble.

Dr. MURIEL KEYES asked what percentage of patients whose sterility was diagnosed as due to tubal occlusion afterwards consented to operation.

Mr. MAGIAN, in reply, said that he thought it best not to undertake tubal insufflation except in a hospital or nursing home. The patient should remain in bed for 24 hours after the operation. There was sometimes complaint of a little discomfort, and in all cases the anæsthetic caused a certain amount of sickness. The injection of lipiodal might be considered quite safe under the same conditions, but the results of any X ray work were generally unsatisfactory unless the operator was an expert. Most patients who were keen enough to have tubal insufflation done would go on with the treatment afterwards suggested. In answer to a question as to the danger of the practitioner being imposed upon by an unscrupulous woman who concealed a suspicion that she was pregnant, it was necessary for him to be always on his guard. This was an additional reason for the treatment being done in a public institution or in a nursing home with the coöperation of a colleague or assistant.

Reviews and Notices of Books.

WHY TUBERCULOSIS EXISTS.

How it may be and has been Cured and Prevented. A Book of Facts. By R. GOULBURN LOVELL. London: John Bale, Sons and Danielsson. 1926. Pp. 211. 6*s*.

THIS work is compiled from various sources by Mr. R. Goulburn Lovell, a retired English architect, who is an old family friend of Mr. Henry Spahlinger, and has been closely associated with him in his work since 1912. The reason why tuberculosis exists is, in the opinion of Mr. Lovell, first and foremost because the Spahlinger methods have not been adequately applied to the treatment of the disease. The book contains a large number of letters and reports as well as extracts from the lay press, and there is a good deal of repetition in consequence. For purposes of review it may conveniently be regarded as consisting of two sections, one dealing with the medical and scientific facts available on the subject of Mr. Spahlinger's work, the other with the struggle for official recognition and financial backing.

The treatment consists of two separate and distinct methods of immunisation—active and passive. The technique of preparation of antigen and antiserum is not given here in sufficient detail to enable workers in other laboratories to carry it out. As regards the antigen, the tubercle bacillus is "separated into its component parts," and from these are prepared "separate antigenic solutions which are injected in successive doses" until finally the patient can tolerate "the whole organism of the bacillus." From separate toxins identified and isolated the antisera are manufactured. "Each toxin is injected into one or more horses. . . . No two toxins are injected into the same animal, and for preparing the complete serum not fewer than 28 horses are needed. . . . When this process has been continued for perhaps 12 months, the horses are painlessly bled. The 28 partial sera thus obtained are combined, and the serum, now complete, is put up into ampoules ready for use." Of these partial sera only seven are in existence at the present time. "The possibilities of a cure with these partial remedies are variable. It may be that with one patient a certain combination of the partial sera—if the right ones are to be had when needed—will be enough to turn the scale and effect a recovery. Another patient may need another combination of partial sera, and so on." To these tubercle antitoxins appear to be added the antitoxins of streptococci, staphylococci, and pneumococci.[1] No details of standardisation of any of these numerous toxins and antitoxins are given. On the therapeutic side the book contains records of guinea-pig experiments, bovine immunisation, and human patients. Between December, 1911, and March, 1912, a first series of five tuberculous (human strain) guinea-pigs were treated. In January, 1913, these animals were killed, and found to be free from tubercle bacilli when smears were made from the organs, whilst emulsions of inguinal and lumbar glands failed to infect eight fresh guinea-pigs (Prof. Letulle's report). Meanwhile a fresh series of 17 animals had been started. Seventeen infected guinea-pigs were treated from April to July, 1912. "In July of the same year 15 of them were completely cured; the other two survived for six months and then died." Controls were also made (Dr. Lardy's report). It is unfortunate that no more precise details of these experiments upon which a bacteriologist could assess their value are given. They are exceptionally important experiments, and we regret that Mr. Spahlinger has not repeated them or enabled others to do so.

The statistics of the bovine experiments are vague. In 1916 "some 20 cows" were immunised by Mr. Spahlinger with his vaccine. Six months after

[1] Vide Report of Chief Medical Officer of Ministry of Health, 1922. H.M. Stationery Office.

immunisation the animals were inoculated with living tubercle bacilli previously proved to be virulent for other animals. Since 1917 "several of these cows" have again been inoculated with living tubercle bacilli of ascertained virulence, but none of them became infected. In 1918 "some of these cows" were killed and examined, but no lesions of tuberculosis were discovered post mortem. The report concludes with the statement that "all the cows" vaccinated in 1916 were tested with tuberculin in 1923 with negative results, and were alive and well in 1924. Presumably the words "all the cows" mean all not killed in 1918. (Fifth British Investigation, 1924.)

The record of the human cases treated covers many pages, and space only permits of a very brief summary. In March, 1926, the Lancashire and Cheshire Branch of the British Medical Association collected in five schedules 489 known cases treated, with an average of 74 per cent., stated to be recoveries during 14 years, and 90 per cent., stated to be definite responses during the past year. These records include surgical cases and cases of pulmonary tuberculosis with or without tubercle bacilli in the sputum, some of them having complications such as laryngitis, enteritis, others being evidently relatively slight cases. It is impossible to analyse them, but the results of the cases with tubercle bacilli present may be quoted from the summaries of the five schedules :—

A. 1912–14 ..	42 cases	..	78 per cent.	recoveries.
B. 1915–20 ..	38 ,,	..	78 ,,	,,
C. 1915–20 ..	265 ,,	..	70 ,,	,,
D. 1921–24 ..	33 ,,	..	43 ,,	,,
E. 1925–26 ..	38 ,,	..	87 ,,	responding.

The low percentage of recoveries in the cases of schedule D is considered to be due to the few sera which were available. In these records, as in others dealing with new tuberculosis remedies, there appear to be very few cases of lupus. Incidentally, at the long last when a cure for tuberculosis is fully established, it is not unlikely that the cases of lupus will provide the acid test.

Only the bald facts have been given to the outside world, the rest remaining now, as in 1912, Mr. Spahlinger's secret. The statement made by the Lancashire and Cheshire Branch of the B.M.A. and quoted on p. 32 of this book that a full exposition of the methods were given in THE LANCET of Jan. 7th, 1922, is not correct in the sense that the exposition is sufficiently explicit to enable others to repeat his work. Mr. Lovell admits that something vital has been withheld, for he defends Mr. Spahlinger's attitude in this respect, quoting Ehrlich's action with regard to salvarsan in support thereof. There are, of course, numerous other instances where important details of a new discovery in medicine have been kept secret until the value of the work has become assured. Allowance must be made for the fear of exploitation; Mr. Lovell quotes at least one instance in which exploitation of Mr. Spahlinger by a commercial firm has been attempted. But in spite of these considerations and without in any way impugning Mr. Spahlinger's good faith, we believe he has made an error of judgment in not taking the medical profession fully into his confidence. This might have been done, for instance, through a select committee of trusted bacteriologists, a method which has been adopted in the past.

The efforts of Mr. Spahlinger's helpers to obtain official recognition and financial backing make a long story of difficulties, misunderstandings, and recriminations. We do not consider it necessary to discuss the prolonged negotiations here recorded by Mr. Lovell, not always in the most charitable terms, with various public bodies in Britain. Briefly stated, the position appears to be that the supply of complete antisera and vaccines has been exhausted for some years, that the preparation of small quantities of partial serum has, however, been carried on, that the production of the complete antisera on a large scale would take three or four years, and that financial provisions for such manufacture cannot be made. The Ministry of Health has agreed to make a test investigation when an adequate supply is forthcoming, but considers that it has no statutory right to permit the Insurance Committee or the approved societies, from whom it was hoped to obtain substantial donations, to allocate funds for the preparation of the remedies. "At present," writes Mr. Lovell, "only those privileged patients whose friends can make substantial donations—free and unconditional—can hope to benefit from the treatment in Geneva, and only then if it be thought that the partial remedies in existence are likely to effect recoveries."

Now that Mr. Lovell, who is fully in the confidence of Mr. Spahlinger, has published this book, we trust that there will be an end of the sensational press notices which have appeared from time to time, and which in the long run merely serve to discourage anxious patients. We are sorry that certain portions of the book should have been written in such a polemic vein. Sections headed A Travesty of Truth, Helpers and Hinderers, and those criticising the principal medical officer of the Welsh National Memorial Association do not really help the cause in medical circles, but merely disgust those who are anxious to reach scientific truth.

LOCAL ANÆSTHESIA IN OTO-LARYNGOLOGY AND RHINOLOGY.

By JAMES JOSEPH KING, A.B., M.D., Assistant Surgeon in Otology, New York Eye and Ear Infirmary. With Supplement on the Toxic Effects of Local Anæsthetics, edited by EMIL MAYER, M.D. Preface by ROBERT A. HATCHER, M.D. New York: Paul B. Hoeber. 1926. Pp. 205. $5.00.

AFTER an interesting historical summary, the first part of this book is devoted to general considerations and a short exposition of the chemistry and action of cocaine, novocaine or procaine, as the American-produced drug is named, and of epinephrin; of the other similar synthetic compounds, butyn and apothesine alone receive mention. Butyn is condemned for its toxicity, and apothesine for its irritating qualities; the quinine-urea combination is also described as irritating. The author's views accord with the reports of the American Medical Association, except that the last-named body condemns the inhalation of ether as an antidote to cocaine poisoning which Dr. King recommends. An interesting subject discussed is the "synergistic" action of morphine, magnesium sulphate and novocaine. The author has found this combination of great value as a preliminary to operation; 2 c.cm. of a 50 per cent. solution of magnesium sulphate containing 2·5 per cent. of novocaine and ⅛ gr. of morphine is injected intramuscularly and repeated three times at half-hourly intervals, the last dose being given half an hour before removal to the operating table. For submucous resection of the septum, the author's method is to give a preliminary injection of scopolamine hydrobromide, gr. 1/150, to paint the mucosa twice with two or three drops of a 20 per cent. solution of cocaine, then with a 1 in 1000 solution of suprarenin, and finally to inject submucously 8 to 10 c.cm. of normal saline containing 5 minims of 1 in 1000 suprarenin solution. He mentions, as Braun's technique, infiltration of the septum with 2 per cent. novocaine-suprarenin solution, but does not give the quantity to be used nor the concentration of the latter drug; apparently he does not use this technique himself, though he says that "the method is sound and may, in time, supplant the use of the more toxic cocaine."

Dr. King has not attempted to provide us with a manual of the technique of local anæsthesia in its application to the surgery of the nose, throat, and ear. The chapters dealing with technique occupy but 36 pages; and these include four half-page illustrations of the after-results of tonsillectomy, which have no real bearing on the subject. This part of the book must be described as perfunctory.

Exactly one half of the book is occupied by the three reports of the committee of the American Medical Association edited by Dr. Emil Mayer. These are not dated, but the first appears to have been issued in 1920, and the third in 1924; this final report has, at any rate, been published before, and was noticed in THE LANCET of May 17th, 1924. The most important recommendations of the Association are that cocaine should not be used by injection, and that cocaine paste or "mud" should be unreservedly condemned. The committee lays down a list of concentrations of local anæsthetics which they believe may be safely applied; for instance, cocaine in the nose not over 10 per cent. and in total amounts of 10 to 15 minims; we think that they do not here take sufficient account of idiosyncrasy, for undoubtedly people do exist who are dangerously affected by a much smaller dose of the drug than this. In this connexion we may quote the account given of a patient's death during tonsillectomy: he had received 2 drachms of a 0·5 per cent. novocaine solution with one drop of 1–1000 adrenalin; he had hypertension and nephritis, but was considered a safe risk; the editor's comment is that "in the opinion of the writer the drug may only be considered as a contributing cause at the most."

The committee collected 43 cases of death by (or under) local anæsthetics, and consider that such accidents are more frequent than is commonly supposed; they point out that death is too commonly due to mistake, such as the unintentional injection of cocaine instead of novocaine, and they insist that the quantities used even in surface applications should be accurately measured.

THE BACTERIOPHAGE AND ITS BEHAVIOUR.

By F. d'HERELLE, M.D., Directeur du Service Bactériologique du Conseil Sanitaire, Maritime et Quarantenaire d'Egypte. Translated in English by GEORGE H. SMITH, Associate Professor of Bacteriology and Immunology, School of Medicine, Yale University. London: Baillière, Tindall and Cox. 1926. Pp. 629. 36*s*.

THIS book contains a complete re-statement of the facts and theories concerning the bacteriophage, and is not merely an enlarged edition of the author's previously published monograph. The amount of work which has been done in this field in the interval which has elapsed since that work appeared in 1921 is shown by the fact that, whilst the original monograph made reference to 88 papers upon the subject, the present book contains 647 references. Dr. d'Herelle has done well in not attempting to incorporate this enormous mass of literature within the framework of his previous publication; he has produced what is, in title and material, an entirely new work.

The subject matter falls into three portions. The largest deals with the phenomenon of bacteriophagy, the technique of its investigation, and the conditions of its occurrence. The second portion deals with the physical properties of the bacteriophage and the evidences and speculations as to its nature. Here we find the author firmly upholding his original contention of the living parasitic nature of the creature, for which he now coins the term "protobe," which, he states, must be understood to designate a protein particle of the smallest possible colloidal dimensions; the dimensions of the bacteriophage are given as about 20 $\mu\mu$ in diameter. Thus, d'Herelle has shifted his grounds considerably since his earlier publication. He then stated that the lysis of organisms by the bacteriophage must in the last resort be due to a soluble enzyme which should be separable from the bacteriophage. He claimed to have demonstrated this experimentally and to have produced a solution of the enzyme capable of causing the phenomena of bacteriolysis which was in this case not serially transmissible. This is the point which has been seized upon repeatedly by opponents of his view, who have maintained the impossibility of obtaining the same results. In the present book he abandons this standpoint, and remarks that such an experiment might be due to a lytic product, either of the bacteriophage or one set free from the dissolved bacteria. The third section is devoted to the use of the bacteriophage in treatment and its significance in epidemics, in which he stoutly maintains that resistance is a question of bacteriophagic activity. It is upon these points that one would like to see some systematic experiments made in this country for the writer's claims are not modest, while up to this point, upon which others have been in the main silent, they have generally proved fairly well founded.

GLIOMA TUMOURS.

A Classification of the Tumours of the Glioma Group on a Histogenetic Basis. With a Correlated Study of Prognosis. By PERCIVAL BAILEY and HARVEY CUSHING. London: J. B. Lippincott Company. 1926. With 106 illustrations. Pp. 175. 21*s*.

IN recent years important developments in histological technique have emanated from the Spanish schools (Cajal, Castro, Rio Hortega, and others), and have resulted in a much more discriminating investigation of neural elements than has hitherto been possible. The results are seen, as far as one branch of study is concerned, in this finely illustrated book on tumours belonging to the glioma class. Older classifications go by the board altogether when the student realises that the authors now distinguish no less than 14 varieties of glioma. Nor is this a mere refinement of histological methods; the distinctions have a clinical as well as a purely technical interest. It has been the endeavour of the authors to trace all cases operated on, since they have been impressed by the fact that in not a few instances of incomplete removal of a glioma the period of survival has been unexpectedly long. They have discovered that the tumours whose cells reproduce the structure of the less differentiated cells in the developing central nervous system belong to an actively growing class much more so than the tumours composed of cells that are more highly differentiated. Hence the importance for prognosis; almost half of the glioma group consists of varieties of tumour which may be regarded as comparatively benign.

THE BASAL GANGLIA AND THE EXTRAPYRAMIDAL MOTOR SYNDROME.

Die Stammganglien und die extrapyramidal-motorischen Syndrome. By F. LOTMAR, privatdozent in the University of Berne. Berlin: Julius Springer. 1926. Pp. 169. M.13.50.

THE output of monographs dealing with the basal ganglia and extrapyramidal disease shows no signs of abating. Nor, unfortunately, is there much evidence in the present instance of any critical combing of so-called striatal syndromes. The conception of the corpus striatum as a convenient resting place for otherwise homeless syndromes and symptoms has received so long a start that it is doubtful whether it will ever be overtaken. Dr. Lotmar includes in his discussion of clinical conditions based on extrapyramidal disease chorea, athetosis, tremor, torsion-spasm, torticollis, tics, "psychomotor" hyperkineses, iteration, palilalia, tonic innervation (Zwangsgreifen), involuntary or spasmodic laughing and crying, and others still, altogether apart from the very numerous vegetative symptoms or symptom-complexes which he specifies. It is frankly impossible to assign all of this conglomerate to the corpus striatum, or possible only at the expense of completely ignoring those contributions by various neurologists at home and abroad which go to prove a quite other localisation for some at least of them. With the author's remark in a footnote, that we are far removed from any unanimity of hypothesis notwithstanding the many important contributions that have been made, we can, however, cordially agree.

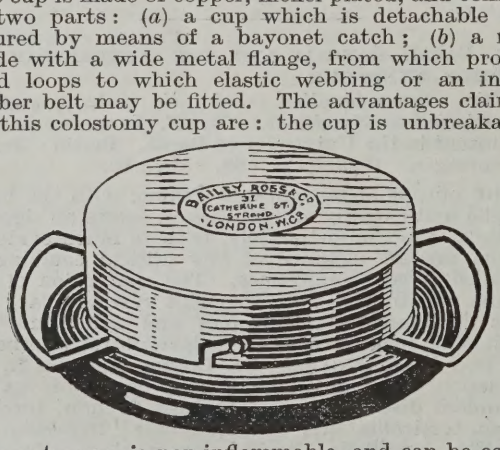
JOURNALS.

Bolletino della Società fra i Cultori delle Scienze Mediche è Naturali in Cagliari. New Series, No. 1, June, 1926.—After an interruption of several years these bulletins have been resumed under the direction of the President, Prof. Carlo Ceni, with Prof. Vanzetti and Prof. Frontali as Vice-Presidents. The first number of the new series contains an address by Prof. Vanzetti reviewing the advances made of late years in biochemistry and biology, culminating in the establishment of three facts: (1) the atom is a labile collection; (2) there exist different elements with the same atomic weight and identical elements with different atomic weight (isotopes); (3) the atomic weights of all the elements are expressed in integral numbers which are practically exact multiples of that of hydrogen. He sees that even the apparently more simple processes of cellular metabolism, the digestion of the proteins, the utilisation of the amino-acids, the chemical mechanism of muscular contraction, the phenomena of fatigue, and the more ordinary pathological changes, are to be found in colloidal systems, apparently simple, but in reality very complicated, in which we are only allowed to perceive a struggle between the individual who tends to defend and maintain the intricate texture of physicochemical equilibrium against the manifold external causes of disturbance. There are three original communications by A. Clementi: on the effects of flocculation of the biliary acids on lactic fermentation, the action of eosin on the central nervous system, and on comparative research with the *B. abortus* and *M. melitensis*. We offer our good wishes for the success of this society and its bulletins.

New Inventions.

A SIMPLIFIED COLOSTOMY CUP.

THERE recently appeared in the *Journal of the American Medical Association* an account of a colostomy belt with an improved colostomy cup. The illustration here given shows a cup made somewhat after the same plan, but simplified to suit the needs of hospitals, nursing homes, and hospital out-patients. The cup is made of copper, nickel-plated, and consists of two parts: (*a*) a cup which is detachable and secured by means of a bayonet catch; (*b*) a rim, made with a wide metal flange, from which project rigid loops to which elastic webbing or an india-rubber belt may be fitted. The advantages claimed for this colostomy cup are: the cup is unbreakable,



does not warp, is non-inflammable, and can be easily and effectively sterilised by boiling, while it is roomy enough to be lightly lined by toilet paper or gauze, and can be removed and cleansed easily. The flange is wide and rigid, and fits well on to the surface of the abdomen. It is best used without any pad, but an indiarubber pad or a layer of gamgee tissue can be worn with it if desired. The appliance is easily kept in place by a piece of elastic webbing with a perineal band. This can be home-made and fastened with hooks and removed for cleaning. The cups can be kept in stock at hospitals and other institutions, and it is not necessary to have a specially made belt for patients with temporary colostomy.

Messrs. Bailey, Ross and Co., 31, Catherine-street, Strand, London, the makers, stock the cups in the following sizes: depth, $1\frac{1}{4}$″ and $1\frac{1}{2}$″; inside diameter, 2″, $2\frac{1}{2}$″, and 3″.

GEORGE F. STEBBING, M.B., B.S. Lond.

Reports and Analytical Records.

LOBELIN "INGELHEIM."

(CHAS. ZIMMERMANN AND CO., 9 AND 10, ST. MARY-AT-HILL, LONDON, E.C. 3.)

THE dried extract of *Lobelia inflata*, official in the pharmacopœias of Belgium and the United States of America, has long been used as an anti-asthmatic and expectorant. In 1918 Prof. Wieland, of Heidelberg, isolated the alkaloid known as lobeline, of which the hydrochloride is put up in the preparation now supplied. Lobeline is claimed to be a specific stimulant of the respiratory centre without simultaneous action upon the neighbouring vomiting centre; it is stated that one hundred times the physiological dose has been administered without inducing vomiting. Clinical experience is adduced from German and Austrian sources to suggest that a dose of lobeline has succeeded where other remedies have failed in restoring regular breathing after an over-dose of morphia and in relieving the dyspnœa of pneumonia attended with cyanosis. Its employment is suggested in CO poisoning. The stimulating action of the drug on the depressed respiratory centre of mice has been recently (séance, 9th July, 1926) demonstrated at the Strasbourg Institute of Experimental Medicine and further work in the Physiological Laboratory of the Middlesex Hospital Medical School is set out in our own columns this week. A communication on the subject was made to the Section of Therapeutics and Pharmacology, Royal Society of Medicine, on Tuesday last. Lobelin "Ingelheim" is put up in ampoules containing for children 1/20 gr. (0·003 g.), for adults 3/20 gr. (0·01 g.) to be given subcutaneously, and boxes are supplied containing 2, 6, or 30 ampoules.

VAN HOUTEN'S PURE SOLUBLE COCOA.

(VAN HOUTEN LTD., COCOA HOUSE, 15 AND 17 FINSBURY-SQUARE, LONDON, E.C. 1.)

The contents of the package (which is guaranteed to contain pure soluble cocoa of the finest quality and full weight) weighed $\frac{1}{2}$ oz. over the $\frac{1}{2}$ lb. net weight claimed on the tin. When analysed this cocoa gave the following results:—

Moisture	5·64 per cent
Fat (cocoa butter)	26·50 „
Total mineral matter	6·66 „
Water-soluble ash	5·54 „
Ash insoluble in hydrochloric acid	Nil.
Alkalinity of water-soluble ash as potash (K_2O)	2·63 per cent
Protein	19·7 „
Calorie value per lb.	1250

The small proportion of alkali employed in its manufacture confers on it the useful property of remaining in suspension in the liquid and thus preventing the formation of a sediment on the bottom of the cup. The flavour is delicious, while the extreme fineness of the grinding prevents any trace of grittiness in the mouth. There is no evidence of the addition of either starch or finely comminuted cocoa shell. This cocoa is an excellent specimen of its class and maintains the high character we found it to possess when examined in our laboratories over 20 years ago.

"DIPLOMA" CRUSTLESS CHEESES.

The report on the crustless Cheddar and Cheshire cheeses produced by the Wilts United Dairies, Ltd., which appeared in our issue of Nov. 27th (p. 1118) failed to mention specifically the brand name of these cheeses—"Diploma."

THE LANCET.

LONDON: SATURDAY, DECEMBER 18, 1926.

THE PANEL DOCTOR'S GRIEVANCE.

IN the face of professional dissatisfaction with the disciplinary machinery of the National Health Insurance Act the Ministry of Health still stands stiffly upon its dignity. At a conference between its representatives and the Insurance Acts Committee, held on Nov. 30th, no definite concession was announced, or even foreshadowed. It is well known that panel doctors have always felt a certain disappointment at the absence of a right of appeal to the High Court. The practitioner enjoys at present, it is true, a right of appeal; but it is an appeal to the Ministry, and it is heard by officers of the Ministry. In this country it is admittedly a principle of law not only that justice should be done, but also that it should seem to be done; a tribunal should convince litigants of its disinterestedness; it should hear all evidence in open court, should allow every accused person an opportunity of making his defence, and should assign reasons for its decisions. While nobody suggests that the Ministry is corrupt or partial, the fact remains that its function in the disciplinary machinery of the national health insurance system fails to fulfil these requirements. Let us see how that system works. If a complaint is made against a panel doctor, a committee is assembled to hold an inquiry. The committee is a competent body, specially equipped for its purpose; it examines witnesses in the presence of the person whose conduct has been called in question; it allows him his natural right of making his defence to a specific charge. The object of the committee is to reach findings of fact which are tantamount to a verdict of "guilty" or "not guilty"; the effect of the verdict is either to exculpate the practitioner against whom the charge is made or to convict him and to assess the measure of blame and punishment appropriate to the case. The committee has no power to pass sentence, but its duty is to make recommendations. Up to this point the machinery has operated without complaint, but from this point onward its working may be open to grave criticism.

Let us suppose that the committee recommends that no penal action be taken against the person whose conduct has been the subject of its inquiry. At this stage that person has a right of appeal to the Minister, but, even if he feels dissatisfied with the committee's findings in points of detail, it naturally may not occur to him to exercise his right of appeal against a decision which is substantially favourable. The traditions of English procedure would hardly suggest that an acquittal at the police-court should be followed by conviction and punishment at the assizes. Yet that strange sequence of events is not unlike what may happen to the panel doctor in the situation already described. The officers of the Ministry, sitting *in camera*, re-hearing the case without either seeing the witnesses or calling upon the defendant, may announce an adverse decision. The committee's recommendation may be set aside and a smart fine inflicted, while, for all that the victim knows to the contrary, the grounds of this new decision may be the merest caprice, unrelated either to the original charge or to the evidence previously given. It is small wonder that panel doctors are disquieted by such incidents or that other practitioners display reluctance to expose themselves to the risk of such treatment.

The answer of the Ministry is that the inviolable mysteries of the British constitution forbid the Minister to part with his sacred responsibility. As we have already observed in this connexion before, there is another and much more important principle of constitutional law at stake—namely, the usurpation of judicial functions by executive authorities. "There is a growing tendency of Government departments and Government officials," said Lord Justice FARWELL some years ago, "to claim the right to act without regard to legal principles and without appeal to any court." This opinion does not stand alone. Sir FREDERICK POLLOCK has written weightily of the ever-increasing propensity, "constitutional traditions and safeguards notwithstanding," to confer more and more discretion of a substantially judicial kind upon officials of the great Departments of State. Finally, only a few days ago, when addressing the Birmingham Law Students' Society, of which he is this year president, the Lord Chief Justice commented upon this aspect of "the great and growing pretensions of the bureaucracy." It was becoming common, complained Lord HEWART to find in Acts of Parliament a clause to the effect that in matters of dispute the decision of the Minister should be final and binding and conclusive for all parties. If the national health insurance disciplinary machinery raises any issue of constitutional principle, it would appear that our foremost jurists will be found on the side of the panel doctors, not on that of the Ministry of Health.

THE ECONOMIC BASIS OF THE NURSE'S TRAINING.

THE glamour of nursing as a vocation for educated young women has passed away, with other enthusiasms regenerated by a state of war. Indeed, the revival of interest in this calling, which followed the release from military service of many zealous and competent V.A.D.'s, was short-lived. Most of the women who were to be dependent on their earnings examined the conditions of work and leisure and the ultimate prospects of the nursing profession and reluctantly decided against its adoption on sober economic grounds. Others, more favourably placed, were able to contemplate a life of service to the sick without fear of indigence in old age, but, having some experience of the strain of ward work shrank from the conditions involved in training, and took up medicine instead. The result was for a time to flood the market with medical women, while the hospitals still cry out in vain for probationers of the right type. The reason is largely that the student nurse, whatever her circumstances, has no option but to pay for the whole of her training in arduous service, whereas the medical student is allowed to contribute some £250 towards education, the balance being met not by her labour but by endowments and State grants to the schools. Moreover, the probationer's service is so necessary to the hospitals that she is offered in return not only tuition but payment in money and in kind, and this very fact may imply the paradox that she is buying her experience at too great a price. Practical work is, of course, indispensable in the study of both branches of the healing profession; but, ideally, its limits should be set not, as in nursing, by the amount of hospital work that has to be done by somebody, but, as in the curriculum of the medical student, by the amount that he or she can do without getting too tired to benefit from demonstrations and

theoretical instruction. In short, the time to give ungrudging service to the sick is when the student is fully qualified; to exact such service before is to blunt a weapon that is not yet tempered.

It is admittedly difficult to do good educational work in institutions which exist primarily for another purpose—the care of the sick poor. The medical schools, being financially independent of the hospitals, do not find the difficulties insuperable, but the training schools for nurses are in a less fortunate position. Under present conditions a shortage of recruits in any year is likely to involve extra work for those who have already enlisted, since these form the chief labour-supply of the voluntary hospitals. The hospitals are always pressed for funds and the extra cost of maintaining a larger staff of qualified nurses and domestic helpers to supplement the supply of workers would not willingly be borne by them. Miss MARY A. NUTTING, in the first of a series of essays bound together under the title A Sound Economic Basis for Schools of Nursing,[1] finds a remedy for the baffling problems arising out of the interdependence of hospitals and student nurses in the separate endowment of training schools. Possible sources of funds would be grants from public authorities, private benefactions and even, under the altered conditions of training that would ensue, fees chargeable to students, scholarships and loans being available for those without private means. Among the direct benefits to be anticipated would be the maintenance of a body of trained experts to give the oretical instruction and practical teaching, and the provision of adequate class-rooms, equipment for teaching, libraries, and recreation-rooms. Indirectly, by subsidising a larger hospital staff, shorter hours for students might be secured, with longer vacations and less night duty. It is clear that endowments and grants to training schools are desirable and that the recruiting of educated women to the profession would be greatly stimulated by the changes they would bring about. The possible secondary effects, which would be less acceptable in many quarters, would be to hasten the recognition of the need for grading nurses, as proposed in the report of the Rockefeller Committee on Nursing Education,[2] and to raise still further the market value of domestic servants. But since the realisation of Miss NUTTING'S ideals are at present still remote, it behoves us to examine less drastic suggestions for improving the attractions of hospital life. The Labour Party has just issued a draft report which will be submitted for consideration to a conference of nursing and kindred organisations to be held in the Caxton Hall, Westminster, on Jan. 28th, 1927. An account of average conditions throughout the country has been compiled, from answers to a questionnaire as to social and educational qualifications, period of training, deposits, wages, hours on and off duty, holidays, meals, living accommodation, superannuation, and so forth. Various recommendations are made, from which we select some of those relevant to the training schools. The Labour Party agrees with Miss NUTTING in advocating the need of financial provision for the training schools, and of separate administrative authority. In order that the probationer's time should be entirely given over to the study and practice of her profession, they also suggest an increase in the permanent nursing staff and the delegation of cleaning duties to maids and orderlies as soon as the probationer has received adequate training in their performance. Among the more important specific recommendations are the equivalent of the school-leaving certificate as the educational standard for admission, four months' preliminary instruction in elementary physics, chemistry, anatomy, and physiology, and a period of training covering two years and eight months. (It will be remembered that the report on Nursing Education, quoted above, has suggested a reduction to a concentrated course lasting two years and four months.) It is recommended that there should be no contract of service beyond a month's notice on either side, and that a 48-hour week with an eight-hour day, inclusive of lecture hours, should be the standard. Consecutive night duty should be limited to three months, and no untrained nurse should have full responsibility for a ward by night or by day. Not less than one free day a week, a week-end per month, and three weeks a year should be allowed. The uniform should be reconsidered and designs adopted "more in accordance with the comfortable dress now worn by women in other employments."

Many of these recommendations are neither new nor revolutionary, and, indeed, reflect the practice current at some hospitals. An exception is the high standard required for preliminary education, which could hardly be enforced until recruits are more numerous; the same may be said for the reduction in the period of training. The least logical recommendation is No. III. 9 which reads "Salaries during training should be sufficient to meet all needs, including holidays, and at present £40 per annum should be the minimum." It is unreasonable to expect hospitals to provide larger salaries for probationers if the amount of routine work they are to do is simultaneously to be reduced. While there should always be a channel through which suitable candidates without private means may take up nursing, there is general agreement among those who have the highest ideals for the profession that it is undesirable to bribe probationers to enter the service of hospitals by the promise of a high initial wage, which is only economically possible if earned by unskilled work. The draft report gives no specific suggestion as to the salary that a fully trained nurse doing private work or attached to a voluntary hospital should command, recommending the organisation of the profession on trades-union lines and the subsequent formation of a National Joint Council to work out scales. We doubt whether this recommendation will be favourably received in the nursing profession, where the relation between individual employers and employed is peculiarly intimate. On the whole, however, the document is a moderate and fairly accurate presentation of the position of the nursing world to-day. If it over-estimates the effective demand for the highly skilled educated nurse, and under-estimates the public need for a supply of deft reliable workers to attend to the household as well as to its sick members, this lack of perception is not peculiar to the Labour Party.

[1] London and New York: Putnam's, 1926, pp. 372, 10*s*. 6*d*.
[2] THE LANCET, 1923, ii., 1195 and 1203.

FILTER PASSERS AND INCLUSION BODIES.

THE zealous search for microscopic forms of parasites in the tissues of animals infected with diseases of unknown cause has resulted in many finds of very varying interest and importance. The ultra- or infra-microscopic viruses have been commonly designated filter-passers since the first discovery of the filterability of the virus of mosaic disease in plants by Iwanowski in 1892 and Beijerinck in 1898, and of foot-and-mouth disease by Löffler and Frosch, also in the latter year. Since then 40 or 50 such viruses causing infective diseases in animals have been

placed by different observers in this group. The chief reason why pathologists have assigned so many to a single category seems to be the inability to recognise an infective agent microscopically. The criterion of filterability is less definite than that of visibility and the former character varies very much in the case of different diseases. The ability of the virus of many diseases which have been placed in the group to pass a fine porcelain filter is doubtful. The discovery of these abnormal bodies inside the cells of the host has been recorded chiefly in these diseases, perhaps partly because in them the search for visible causative agents has been keener. In some cases the inclusion bodies are not very readily demonstrated nor very uniform in appearance, but in others, such as vaccinia and rabies, they are of very real characteristic and even diagnostic importance. The attempt to explain the association of such large forms with an infra-visible virus has led to the invention of the name chlamydozoon for the hypothetical micro-organism on the view that it was covered by them as with a garment. R. J. Ludford and G. M. Findlay, in the *Journal of Experimental Pathology* for October last, declare that this name now implies a widely discredited hypothesis and is merely a cloak for ignorance. Nevertheless, the bodies themselves and their riddle have an abiding influence, and these two workers have given a valuable aid to their study by the pictorial review of 22 such microscopic appearances culled from the literature of diseases due to ultramicroscopic viruses. Representations of bodies whose nature is unknown are necessarily vague or diagrammatic and the authors have not even drawn them all on the same scale. But they have well indicated the variety in form and position in the cell of these objects and the extent of the problem which remains unsolved. It is well to be reminded from time to time of the large range of infective diseases the nature of whose cause is quite unknown, and this survey of the observations already made should assist their comparative study. The same writers give a detailed account in the same number of their observations on the cytology of fowl-pox. They endorse the view most widely held at present that the inclusion bodies here are not parasites but pathological structures belonging to the host.

DR. ESSEX WYNTER'S GIFT.

A GREAT and discriminating piece of generosity was recorded last week, when, at a meeting of the governors of Middlesex Hospital, it was announced that Dr. Essex Wynter had given to the hospital his beautiful private house, Bartholomew Manor, Newbury, together with a large group of sixteenth century cottages and the surrounding land. Major Astor, in making to the court of governors an official declaration of the gift, added that Dr. Essex Wynter not only proposed to dedicate, after the death of himself and his wife, his fourteenth century home and its dependencies of nearly an equal antiquity to be held in perpetuity as a home for retired members of the nursing staff of the Middlesex, but with extraordinary open-handedness was providing an endowment fund for the maintenance and upkeep of the property. A side of Dr. Wynter's gift which marks its deeply personal character is that he is presenting to the institution, with which he has been so long and honourably associated, a property over which he and his wife have watched with loving care. Through their personal skill and work the old manor house and the cottages on the estate have been intelligently repaired, while the surrounding land has been repurchased, securing a suitable and unspoilt environment for the buildings. Already two of the cottages have been reconstructed to form self-contained homes, which are now occupied by nurses, giving a practical example of what this fine gift to the hospital will eventually imply. The son of a great London medical school has in this beautiful gift recognised in a practical yet moving way indebtedness to his home of learning and the theatre of his life-work.

Annotations.

"Ne quid nimis."

BIOLOGY AND HUMAN LIFE.

THE problems of mental deficiency in their relation to the health of the community in the present and the future is beginning to attract the attention which it deserves. There are, says Sir George Newman in a recent report,[1] 33,000 children in England and Wales returned as mentally defective, and some 200,000 more as exceptionally dull and backward. Neglect of these children at the stage when something can be done for them leads to a great mass of unemployability, industrial incapacity, delinquency, and even of crime when they grow up. The conference, whose concluding session is reported on p. 1283, considered these problems of mental deficiency from many different aspects. Sir Leslie Scott laid down what he thought was a reasonable aim—namely, effective control of such defectives as are anti-social or unbalanced, leaving for communal care those who in the right environment can live a fairly happy and useful life. As to the form which this control should take opinions were sharply divided. It is only the Eugenics Education Society which has as yet had the courage to draw up an outline of a practical eugenic policy.[2] But it is not only eugenists who feel that man has gone so far in bringing his physical environment into subjection that it is about time he set about making himself more worthy of his surroundings. Such is, for instance, the theme of Prof. Julian Huxley's Norman Lockyer Lecture delivered last month before the British Science Guild. Modern biology has, in truth, come nearer our daily lives than some people remember, and possibilities of deliberate human improvement have come very near, if they have not already entered, the field of practical action.

Broadly speaking, there are two schools of thought on the subject. One is fired by the new knowledge of heredity, vitamins, and the like, and observes how successfully biology has dealt with the parasites of men, animals, and plants. It asks that our knowledge should be vigorously applied and that active reform should be instituted. Prof. Huxley in particular urges the pressing urgency of doing something about birth control and the necessity, rather less immediate perhaps, of a eugenic programme. He views human increase as inevitably leading to disaster, and would have us weed our population and breed our population as we weed our gardens and breed our cattle. The other school is biological, too, though it consists more of naturalists than of experimentalists. It reflects on the fact of experience that animate nature is a wonderfully good fit and that the components live in a harmonious adjustment with one another, which seems to be instinctive or automatic; that the disturbance of this whole which follows the disturbance of one of the parts is apt to extend to a breadth and length which we cannot predict; and that after such a disturbance the components will settle down into a new whole, which will be as stable as its forerunner until its constituents or surroundings are altered. It believes, in fact, that live things regulate themselves quite well and that man has not lost his animal characteristics so completely that he has none of this capacity for automatic regulation left. In its most complete form it is the school of *laissez faire*.

Most ordinary people will want some compromise. Biological knowledge is great, but biological ignorance is greater, and hardly anyone will be prepared to give themselves over to a life ordained and directed by

[1] Annual Report of the Chief Medical Officer of the Board of Education for the Year 1925. H.M. Stationery Office. 1926. 1s. 6d.

[2] Eugenics Review, 1926, xviii., 95.

biologists. It is sufficient to recall what would have happened if we had all kept strictly to the diet which the physiologists of 1910 would have told us was complete and adequate. They will agree that it is very proper to weed your garden, but that it is rather dangerous to do it too thoroughly before you have made up your mind quite clearly which plants you are going to class as "weeds." They will agree that selective breeding might do as much for men as for cattle if we can settle what we are going to breed for before we begin. And if they are of the sort which wants to do something, they will probably come to the conclusion that it would be good to pull up the very worst and undoubted weeds and to leave the speedwell in the cabbage patch for the sake of its beauty and cheerfulness, though it is not much use to eat, and to encourage the making of good and clever people without putting too many obstacles in the way of those who are not so obviously desirable but out of whom astonishingly fine children sometimes come. And of birth control they seem to know as much as is necessary already. Anyone with eyes to see can perceive the progress which our community as a whole has made—physically, mentally, morally, and spiritually; it is a sight which more than anything else encourages those who look for further advance. Prof. Huxley tells us that we "are becoming a scrub herd of mongrels." If it were in any degree true it would be depressing; fortunately it is not.

THE TOXÆMIA OF INTESTINAL OBSTRUCTION OR PARALYSIS.

A CLINICAL and experimental investigation [1] into the causation and treatment of the toxæmia associated with intestinal obstruction and peritonitis has been made by Mr. B. W. Williams at St. Thomas's Hospital. It is a matter of common observation that constipation or intestinal obstruction in the large bowel gives rise to no acute toxæmia until the stagnation extends to the small intestine, and on Mr. Williams's theory this fact is easy to understand. The arguments on which his hypothesis is based are clearly set out. The author first draws attention to the similarity of symptoms in acute obstruction and in the late stages of acute peritonitis and to the resemblance both bear to the clinical aspect of anaerobic toxæmia resulting from war wounds. He suggests the possibility that in all three conditions the patient is suffering mainly from an acute toxæmia resulting from abnormal proliferation in the obstructed intestine of anaerobic organisms. The normal distribution of anaerobes in the intestinal tract is then discussed. *B. welchii* requires for its growth and the production of toxin an anaerobic medium which should be neutral or slightly alkaline. In acid medium the toxin is destroyed and the bacillus would be rapidly outgrown by other organisms. The lower part of the ileum is the only section of the intestine where the optimum conditions are fulfilled, but normally the passage of material through the small intestine is extremely rapid and the period during which the reaction is suitable for proliferation would be very brief. On the hypothesis set out by Mr. Williams there should be a great proliferation of *B. welchii* in the small intestines of patients with acute obstructions, and an examination of suitable post-mortem material an enormously increased quantity of this bacillus—among many others—was indeed obvious. Animal inoculations showed, moreover, that not only the bacillus itself, but the presence of its exotoxin, could be demonstrated in the contents of the small intestine in advanced obstruction in human cases and in cases where the obstruction had been experimentally produced in animals. The next step was to attempt to find evidence that *B. welchii* toxin is actually absorbed from the intestine in these cases and is responsible for the toxæmia. Mr. Williams claims that the clinical features of late cases and the presence of fine fatty degeneration in the heart and liver of patients dying of acute obstruction and of peritonitis are compatible with the absorption of *B. welchii* toxin and that the intravascular hæmolysis shown in the endothelium of the heart and great vessels, in the absence of evidence of infection with other hæmolytic organisms, is strong corroboration of such absorption. The final test of the hypothesis, however, was the administration of *B. welchii* antitoxin in suitable cases of peritonitis and obstruction. It was decided to use cases of appendicitis for the clinical trial because (1) a fairly large number of cases are available at St. Thomas's Hospital, (2) cases which are "going wrong" give fair clinical warning, (3) the mortality is well established and fairly constant between 5 and 10 per cent. It was decided to administer serum to all cases in which clinically the chances of survival appeared to be 50 per cent. or worse. This included (*a*) moribund cases of severe general peritonitis; (*b*) streptococcal peritonitis, unlocalised, in children under 12 years; (*c*) cases which after appendicectomy continued to show signs of advance of the disease by rising pulse-rate, abdominal distension, and toxæmia. In order to increase the number of available cases the coöperation of three other surgeons was enlisted.

The series consisted of 256 consecutive unselected cases of which 18 of the most severe were treated with *B. welchii* antitoxin. In the series there were three deaths, giving a mortality of 1·17 per cent. During 1925 a control series of 111 cases, also consecutive and unselected, under surgeons who were not using the antitoxin, gave a mortality of 6·3 per cent. The clinical effects of the administration of antitoxin were often striking and immediate, restlessness being diminished or abolished, cyanosis disappearing, and sleep ensuing. The pulse-rate fell in cases of very marked toxæmia though not for a day or two, abdominal distension disappeared, though sometimes slowly, and the bowels began to act spontaneously. Similar clinical effects were observed after the use of antitoxin in a much shorter series of cases of obstruction, and though the author is careful to point out that similar signs of improvement may and commonly do follow the simple surgical relief of obstruction, and that the series is too short to be at all conclusive, the fact remains that of 54 cases of acute intestinal obstruction only five died, the normal mortality being 24·8 per cent. Mr. Williams gives suggestions for dosage and indications for treatment with *B. welchii* antitoxin for the benefit of those who wish to try a method which is still in the experimental stage and discusses its disadvantages. These include the sensitisation of the patient, the possible production of rashes, the remote risk of anaphylaxis, and lastly the expense involved. The serum is costly and if it is to be of use large amounts must be given. The vast majority of cases of acute appendicitis, however, will recover by treatment on ordinary surgical lines. In cases which develop signs of intestinal obstruction or paralysis and toxæmia, however, the mortality is very high and the disadvantages of serum therapy are of less moment. It is therefore to be hoped that a trial will be given to this method of treatment which is, of course, only ancillary to the relief of obstruction or the removal of the cause of the peritonitis.

[1] British Journal of Surgery, No. 54, xiv., 295.

THE HOSPITAL SAVING ASSOCIATION.

THERE is no check to the progress of the Hospital Saving Association. The report for the year ending last July, which has just been made available, shows that an organisation established so recently as 1922 has already an income of £150,000 and 267,000 contributory members, more than 100,000 of whom joined during the last 12 months. Since the rate of increase works out at over 2000 members a week the total must by now be considerably larger, while the income is growing in proportion. No doubt it would be unduly optimistic to suppose that the present rate of progress will continue indefinitely—three years

ago there were 15,000 members and the revenue was £22,000—but the number of persons eligible for membership is so large that there is abundant room for further expansion; there are hundreds of thousands of eligible persons in the London district who have yet to realise the advantages of a system of health insurance of which the premium is only 5*d*. a week. At the sacrifice of ten cigarettes a fortnight the insurer is made free of hospital treatment not only for himself or herself but for all dependents living under the same roof. The income limit, moreover, is wide, and entry is permitted to the single person earning up to £4 a week, to the married person without children under 16 up to £5, and to the married person with such children up to £6. When such advantages are to be enjoyed at so trifling a cost it is not surprising that the great army of people who earn small incomes should be eager to qualify for them. Nor are the insurers the only beneficiaries, since last year the hospitals received over £80,000 in return for their work for the Association. Many of the hospital authorities regard the Association's work as a prop to the voluntary hospital system—a prop that will do much to prevent it from falling into the hands of the State or municipalities—whilst it is claimed that experience shows that the general practitioner is in no way injuriously affected. A year ago Lord Hambleden, the chairman, prophesied that the membership would, in time, reach a million, and the progress that is being made suggests that the Association will hardly have reached its 'teens by the time the prophecy comes true.

PLASMOCHIN.

WE have already given some account of the properties of plasmochin, a synthetic remedy for malaria, whose discovery was announced at the conference of Naturforscher and Ärzte, held at Düsseldorf in September.[1] A recent supplement to the *Archiv für Schiffs- und Tropen-Hygiene* (vol. xxx., 3) reports in full the four papers communicated to the conference. The first is by Dr. H. Hörlein, director of the drug department of the Elberfeld factory, where plasmochin was developed, who points out that quinine is so unpleasant to take, has such troublesome after-effects, and is so expensive, that the ever-optimistic chemist felt he ought to make something to replace it—preferably something which would destroy the malarial crescents which infect mosquitoes. It was a study of quinine synthesis that led Perkins to his first coal-tar dye, mauvein, in 1856, when quinine was thought to have two chinolin rings in its molecule; this idea, says Dr. Hörlein, was in 1890 proved mistaken by the work of the Elberfeld dye factory. Quinine he describes as an alkylamino-6-methoxychinolin, and he adds that plasmochin is something similar. More than that he will not say, because so many countries allow pirating of chemical work, though these researches are in the highest interests of mankind. Plasmochin, like Germanin (Bayer 205), is the outcome of the joint work of the chemical and chemotherapeutic sections of the Elberfeld factory, and in the second paper Dr. W. Röhl, head of the chemotherapeutic laboratory, takes up the tale of its investigation. Human malaria, he says, attacks only men and apes, but bird-malaria, an infection with *Plasmodium relictum* (formerly Proteosoma) carried by *Culex pipiens*, is influenced by quinine, and is easier to work with. He devised a method of dosing canaries by means of an œsophageal catheter, a known quantity of the drug being passed into the stomach. When a bird is infected by intramuscular injection, parasites appear in the blood in five days; if quinine hydrochloride is given for the first six days after injection they do not appear till after the tenth. The dose of quinine for a bird of 20 g. is 1 c.cm. of a 1/200 or 1/800 solution; higher dilutions are ineffective, and lower dilutions are harmful, and so Dr. Röhl puts what he calls the "working margin" of quinine at 1 : 4. Using this technique he investigated hundreds of drugs for a long time without result. Finally he tried plasmochin, and found that 1 c.cm. of a 1/50,000 solution, given daily for six days, delays the development of the plasmodium as well as quinine in dilution of 1/800; the drug is, therefore, 30 times as powerful. Birds take it well up to 1 c.cm. of 1/1500 solution, so its "working margin" is 1 : 30; it is thus much more convenient than quinine. When an already infected bird is treated there is no effect on the first day, but by the second all the larger parasites, including the gametes, have disappeared or degenerated. The vast majority are killed, the destruction being due to direct action on the parasites, and not, Dr. Röhl considers, to increase in antibody formation, for plasmochin has no effect on an infection made two hours after its administration. It is the first synthetic drug found useful against avian and human malaria. Prof. F. Sioli, of Düsseldorf, describes how plasmochin was tested in the treatment of general paralytics inoculated with tertian malaria. The daily dose at first was 0.75g., and was gradually raised. The fever ceased at once, but relapses occurred. The most satisfactory course was found to be 0.75 g. a day in 2 or 4 doses, continued for three days after fever had gone and parasites had disappeared, the same dose being then given every fourth day for two or three weeks. There were no deaths, and the only complication was a cyanosis which stopped treatment, it being always found that the patient was then cured. Plasmochin, says Dr. Röhl, cures the tertian malaria of general paralytics, and can be confidently recommended. The last paper is by Prof. P. Mühlens, of Hamburg, who gives an account of his experiences in treating natural malaria in Hamburg. During his investigations he laid special stress on making exact blood examinations daily, and had the doses administered by his own assistants, so as to be quite sure what doses patients were actually taking. The plasmochin was generally given in 0·3 g. tablets, and when the patients got about 2 g. in a day they complained of pain in the stomach, which disappeared when the dose was reduced. Large doses produced a slight cyanosis of tongue, gums, and nails, which was not, he thought, toxic, but vasomotor. A daily dose of 1·5 g. caused the parasites to disappear in five to seven days, and then after an interval of four to five days further doses were given for three days. The whole course lasted four to six weeks, but was difficult to enforce, as the patients (there were 134 of them) felt so well that they were apt to leave the hospital too soon. Relapses were rarer in tertian and quartan malaria than with quinine, but, if plasmochin was used alone they were more frequent in tropical malaria, because, though plasmochin deals effectively with crescents, it has less influence on the small ring forms than quinine. After plasmochin even late relapses showed no crescents, whereas they were still present after quinine. This disappearance is held to prove that they are formed in the peripheral circulation. As quinine and plasmochin seemed to be auxiliaries, they were given together, in tablets containing 0·15 g. plasmochin and 2 g. quinine, three of these being taken every day. Under this treatment relapses ceased to occur. The tablets fall to pieces in water, becoming a suspension which children take readily. As for acute malarial fevers, says Prof. Mühlens, 250 cases have been treated in the Balkans, and many in Spain and Italy; the new drug has been as successful in curing them as it has proved itself in Hamburg, whilst blackwater fever has also been satisfactorily treated. He summarises the position by the statement that plasmochin seems to cure malaria more easily than any other drug, and, above all, it kills the gametes and so lessens the chance of infecting mosquitoes and further spreading the disease. It has also been used for prophylaxis in a dose of 1·5 g. twice a week for nine weeks in West Africa, apparently with great success.

Prof. Mühlens ends his paper with well-deserved compliments to the Elberfeld factory and its staff.

[1] THE LANCET, Oct. 9th, p. 765, and Oct. 16th, p. 825.

MEDICAL FEES AT INQUESTS.

AFTER a long voyage the Coroners (Amendment) Bill, embodying reforms recommended many years ago by Sir Mackenzie Chalmers's Committee, has at last reached harbour. Twice its progress was interrupted at the Committee stage in the House of Commons for the tiresome and not very creditable reason that a quorum of 20 Members of Parliament could not be found. Each of these set-backs consigned the Bill to the bottom of the Parliamentary list, but, fortunately, the items above it were disposed of with unexpected rapidity, and, when at last the Committee stage was reached, various proposers of alterations generously forebore to press their amendments. In its present form—as may be seen from our Lobby Correspondent's report—the Bill has not been greatly changed from its original wording. The disqualification clause at the beginning now covers the holding of the office of mayor as well as that of councillor or alderman of the local authority which appoints the coroner. A new clause empowers the Coroner of the King's Household—an officer whose labours are, happily, not heavy—to appoint a deputy. The main change in the final stages of the Bill was the insertion of a clause fixing the fees of medical witnesses. At first the Home Office were to give 1 guinea to a practitioner attending an inquest whereat he has made no post-mortem examination, 1½ guineas for making a post-mortem examination and reporting the result to the coroner without attending to give evidence at the inquest, and 2 guineas for a post-mortem examination, report of result, and attendance to give evidence. In the final Committee stage amendments moved by Sir Richard Luce and Dr. F. E. Fremantle succeeded in slightly raising all these fees. The fee for mere attendance is increased to 1½ guineas for each day on which the practitioner is required to be present; the post-mortem fee is raised from 1½ to 2 guineas; and the inclusive fee of 2 guineas for post-mortem examination, report, and attendance is brought up to 3 guineas for the first day and 1½ guineas for every subsequent day on which attendance is required. Even with these increases the fees will hardly compensate practitioners for the loss of practice which a visit of uncertain duration to a coroner's court involves; but the advance goes a little way towards approximation with modern standards of money value. The Act takes effect next May; meanwhile the Expiring Laws Act will continue the temporary provisions (as to number of jurors and as to inquests without juries), which will then be superseded.

DIFFUSE GASTRIC POLYPOSIS.

Dr. Harold Brunn and Dr. Felix Pearl,[1] of the Surgical Services of the University of California Medical School and Mount Zion Hospital, remark that diffuse gastric polyposis, otherwise known as polyadenoma, adenomatosis gastrica, or papillomatosis gastrica, is apparently a rare disease, as they have been able to collect only 84 cases from the literature from 1820 to 1925, including five proved cases and seven probable cases which came under their personal observation. The average age of the patients was 54 years, the youngest being 20 and the oldest 82. The proportion of males to females was 3 to 2. Gastric polyposis may be either congenital in origin or arise from an inflammatory basis. It is noteworthy that Fibiger and Wassink were able to produce polyposis experimentally in the stomachs of healthy rats by feeding them with nematodes or cockroaches containing nematodes. Gastric polyposis may appear either as district polypi adenomatous in nature or as slightly elevated hypertrophic plaques which are probably telangiectatic in origin. The symptoms and physical signs are not characteristic, and frequently the condition is not detected until autopsy, as occurred in all the cases on record up to 1909. When present the symptoms are of the same type as those found in any gastric disorder, consisting in epigastric discomfort, distension, and vomiting. The writers regard achylia as the most significant finding, and are of opinion that in combination with fresh blood and abundant mucus it should suggest the diagnosis of gastric polyposis. The most valuable diagnostic aid known is found in a properly interpreted skiagram which shows irregular defects in the margin of the gastric shadow at the site of the tumour. Some help may also be obtained from gastroscopy and examination of shreds from gastric washings. The treatment is entirely surgical. Owing to the tendency of these tumours to become malignant, as much of the tumour-bearing area as possible should be excised. Local infiltration with or without splanchnic block is the proper method of anæsthesia to employ.

[1] Surgery, Gynecology, and Obstetrics, November, 1926.

ST. PETER'S HOSPITAL.

IT is not very easy to collect money for small hospitals which deal with special complaints, and the difficulty is increased when the building is hidden away in some inconspicuous street. St. Peter's Hospital, though barely a hundred yards from the Strand, is so remote from the line of traffic that relatively few Londoners have even heard its name, and it is handicapped in any appeal to the general public by the special nature of its work. By its services to surgery, however, this hospital has deserved and won a reputation amongst medical men in all parts of the world. As a centre for teaching and for developing the technique of operations on the urogenital tract its name stands high—so high that when Sir John Thomson-Walker visited Canada recently he found that 60 per cent. of the many hundred practitioners whom he met had visited or taken courses at St. Peter's. The work on prostatectomy done by Sir Peter Freyer did much to bring the institution into prominence, and that this prominence is maintained is clear from the fact that every year 900 medical visitors come to examine its methods—to see the practice of a hospital with only 32 beds. For something like 40 years even these few beds have been supported with increasing strain, and nowadays at least three operable patients present themselves for every bed that is available. Although enlargement of a hospital does not necessarily mean improvement of its service, it is obvious that St. Peter's has a right to the support that will make extension possible. Nearly half the annual income is provided by the patients themselves, and the present appeal is especially for £50,000 required to enlarge the hospital by absorbing a line of shops, from which at present a considerable income is derived. Without any special public announcement some £5000 has already been raised by friends and sympathisers, and an attempt is now being made to interest a larger number of people. Some of our readers may, perhaps, have patients to whom the work of St. Peter's would particularly appeal.

TROPICAL MEDICINE AND THE LONDON SCHOOL.

THE study of tropical medicine becomes more important every year. As the commercial exploitation of tropical products widens, more and more Europeans find employment and settle, with their wives and children, in countries of exacting climates and strange indigenous diseases. Moreover, the demand for these products draws more and more natives from their villages and herds them into large settlements, where, unless skilled health administrators are at hand to discover and enforce the laws of hygiene, they become a prey to epidemics far more virulent than those of temperate countries. Much of the knowledge that makes life possible under these conditions has been gained by the London School of Hygiene and Tropical Medicine and its forerunners, and perhaps no body of research workers has contributed so much that is of immediate

vital importance. The work of this school is periodically reviewed in "Collected Addresses and Laboratory Studies," [1] the second volume of which, compiled by Prof. R. T. Leiper, has lately appeared. The rather dull title belies the contents. The laboratory studies are, of course, highly technical records, but the ordinary reader will find the book worth getting if only for the three addresses by Dr. Andrew Balfour, Director of the School. In the first of these, entitled Why Hygiene Pays, he reviews what has been achieved, and its value in the promotion of health in tropical dependencies. The second is called Some British and American Pioneers in Tropical Medicine and Hygiene, whilst the last and shortest, Some Landmarks in Tropical Medicine, points out the way by which the epidemic diseases of plague, yellow fever, filariasis, and cholera were fought and conquered. Of the laboratory studies not a few will interest others besides specialists in the particular subjects, which range from human entamœbiasis in temperate zones and the differentiation of food poisoning bacteria to Dr. P. A. Buxton's interesting inquiry—not strictly a laboratory study—into the causes of the depopulation of the Melanesian Islands. The volume also contains a description of the recent laying of the foundation-stone of the school's new home in Keppel-street. The annual report of the school, presented to the governors on Dec. 7th, states that progress with the building has been seriously delayed by the dispute in the coal industry, but it is hoped to put up all the steelwork within five or six months. In the meantime the number of students is increasing and the work of the Institute of Agricultural Parasitology continues to expand under Prof. Leiper's direction. The Ministry of Agriculture has converted its grant to the Institute into a block grant of £5000 a year. The question of the hospital at Endsleigh-gardens is still in abeyance, the Seamen's Hospital Society having announced its intention to maintain it for a limited period only, and the Minister of Health has appointed a committee, of which Sir Alfred Mond is chairman, to report on how the necessary clinical and pathological facilities can afterwards be secured to the School. The arrangements for financing the work of the School are incomplete and representations were made to H.M. Treasury as long ago as 1925 that the commitment of £25,000 a year entered into by the Government when the Rockefeller gift was accepted, would fall far short of the requirements for the staffing and upkeep when the School is fully established in the new building. The suggestion has been made that additional funds might be raised, in support of the Tropical Division of the School, from Colonial Government and commercial sources, so as to ease the burden on the Imperial Exchequer. The board is at present exploring this possibility.

THE POST-ENCEPHALITIS UNIT.

AT their meeting last Saturday the Metropolitan Asylums Board received a report on the first complete year's working of the post-encephalitis unit opened in the autumn of last year at the Northern Hospital, Winchmore Hill. This unit, consisting of four pavilions, each of 25 beds, was fully occupied almost from initiation. Its arrangement and intention were dealt with in a valuable report by the consulting neurologist, Dr. S. A. Kinnier Wilson, which appeared not long ago in the Board's annual report for 1925–26.[2] Dr. Wilson then enunciated the principles on which patients were admitted and the type of case in which improvement was likely to follow the measures employed, but he then warned the Board how diverse are the sequelæ of the disease, as diverse indeed as its phenomena, and he regarded the clinical material of the unit as likely always to be heterogeneous. Special investigation would be needed to decide to what extent behaviouristic defects and apparent changes in personality were in actual fact the outcome of the brain disease. Dr. G. A. Borthwick, medical superintendent of the Northern Hospital, in his report[3] on the first year's working, amplifies what Dr. Wilson has already set out, and states that the unit has not been productive so far of any very positive curative results. Its future value may be rather that of a clearing-house for cases suffering from any of the many residua of the disease, where they may be observed, classified, and allocated in various ways. For children showing psychic changes a period of residence at a hospital school should prove the best line of treatment, with release to their homes when their condition improved enough to justify it. The hospital school should also suit the children with Parkinsonian syndrome who, as a rule, presented little mental disturbance and were well behaved; the milder cases of this type could attend an ordinary special school for physical defectives. Patients showing excito-motor phenomena had not improved appreciably, despite treatment, and Dr. Borthwick thinks the slighter cases with little or no psychic change might be allowed to return home, leaving the bedrid cases in hospital or infirmary. The same policy would apply to cases with definite paralysis, for it is the experience of the unit that this shows no tendency to improve; nor have the cases of endocrine disturbance responded to treatment. Maniacal outbursts require transference to a mental hospital, where constant supervision is available; the mentally deficient class comes under the Mental Deficiency Act of 1913 in certified institutions. In hopelessly bedrid cases an apparently lifeless appearance may conceal remarkably good intelligence, and some provision for occupying their minds should be made. Dr. Borthwick recommends the continuance of the unit for at least another year, and in this the Infectious Hospitals Committee concurs. In an appendix to the report Dr. T. H. Whittington, visiting oculist, remarks on the number of children who showed a tendency to ocular divergence, a percentage of 37 taken all round. Many of the children had poor sight owing to errors of refraction, and five at least were found to have vision such as would make them quite unable to see any writing on the blackboard. Routine ocular examination is essential to make the best use of what powers of mental appreciation these children retain. At the end of the year under review there were 93 cases in the unit, 133 cases having been admitted and 40 discharged. Of these 12 were improved, 6 in such a condition that they were unlikely to improve by further treatment, 4 proved unsuitable for the unit, and 18 were taken away at the request of the parents. There was no death in the unit.

Lord D'Abernon has accepted the chairmanship of the Industrial Fatigue Research Board, to which he has been appointed by the Medical Research Council. Mr. William Graham, M.P., has relinquished the chairmanship of the Board under the pressure of other public work, but will remain a member of the Board.

[1] Collected Addresses and Laboratory Studies of the London School of Hygiene and Tropical Medicine. Vol. ii. 1926. Compiled by Prof. R. T. Leiper.

[2] THE LANCET, Sept. 4th, p. 512.

[3] From the Clerk to the Metropolitan Asylums Board, Embankment, London, E.C. 4.

CHELSEA CLINICAL SOCIETY.—The next meeting of this society will be held at the Florence Restaurant, Rupert-street, London, W., on Tuesday, Dec. 21st, at 8.30 P.M., when there will be a discussion on Septicæmia, in which Dr. A. P. Beddard, Dr. J. Freeman and Mr. J. E. McDonagh will take part. The meeting will be preceded by dinner at 7.30 P.M.

SOCIETY FOR THE STUDY OF INEBRIETY.—On Tuesday, Jan. 11th, 1927, at 4 P.M., at the rooms of the Medical Society of London, Chandos-street, Cavendish-square, W., Commissioner Adelaide Cox, of the Women's Social Service Department of the Salvation Army, will open a discussion on the Inebriate Woman. Members and associates are at liberty to introduce visitors.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CCII.

TREATMENT OF RAYNAUD'S DISEASE.

IF the arterial supply to a part is cut down the part becomes cold, but its colour depends upon whether the capillaries and venules are empty or engorged; in the former case the part is white (*local syncope*), in the latter case blue (*local asphyxia* or *cyanosis*). In the worst cases gangrene will result. Such, in brief, is the order of events when a normal part of the body, such as the hand, is exposed long enough to cold to produce frost bite; and the same series of changes occurs in the subject of Raynaud's disease as the result of but little exposure. The asphyxial and gangrenous fingers are very painful. Gangrene may supervene directly on the local syncope stage. Raynaud himself suggested that disturbed innervation of the capillary vessels was responsible, and recent work has fully brought out the fact that the capillaries are as important as the arterioles in altering the supply of blood to a part. A frequent subject of Raynaud's disease is a young woman who suffered from chilblains as a child, and as an adult is permanently afflicted with so-called "beef steak" hands. In long-standing cases of the disease the skin over the extremities becomes sclerodermatous, while the joints present features similar to those of rheumatoid arthritis. At the end of an attack the affected parts become abnormally hot and the patient complains of a feeling of pins and needles. In fact, a temporary erythromelalgia results. The clinical features characteristic of Raynaud's disease may be due to any cause which interferes with the arterial blood-supply, such as syphilitic arteritis or thrombo-angiitis obliterans. The trophic changes, often resulting in gangrene, that occur in syringomyelia must be distinguished. Local gangrene, which can hardly be confused with Raynaud's disease, is well known in malaria and in certain other fevers. Pathomimia, or multiple skin gangrene, and ergotism would be extremely rare sources of error in the diagnosis.

In Raynaud's disease proper there is no obvious cause for the obstruction; it has been attributed to vasomotor spasm. Occasionally the presence of a cervical rib or sarcoma of the spinal cord have produced a condition which is indistinguishable from Raynaud's disease, by causing irritation of those sympathetic fibres which function as the vasomotor nerves of the hands. Raynaud's disease has been observed to result from poisoning by arsenobenzol. That this disease is not merely a local affection of the hands and feet is shown by the facts that the ears and the tip of the nose occasionally become gangrenous and that associated changes may occur in other organs. The central nervous system may be affected in various ways. Temporary monoplegia, hemiplegia, paraplegia, and aphasia have been observed. Amblyopia has been shown to be due to a narrowing of the retinal arteries, while the veins are dilated and pulsating. Colic may be explained by similar changes in the wall of the alimentary canal.

General Measures.

Raynaud's disease is thus a general condition, and its manifestations are due to vasomotor disturbances in various parts of the body; sources of worry must be removed as far as possible; patients are often inclined to neurasthenia or hysteria; the general health of the patient must be improved if possible, and sources of local sepsis removed; he may be well advised to spend the winter in a warm country, such as Egypt. Syphilis, quite apart from its liability to produce arteritis, is recognised as a possible primary factor, and antisyphilitic measures should be adopted if there is any indication that syphilis is present in an active stage. Where the uric acid in the blood is high, treatment with one of the cinchophen compounds such as atophan, agotan, phenoquin, quinophan, should be considered, the usual dose being 15 gr. t.d.s. three days in each week, or atoquinol in doses of 4–8 gr., also t.d.s.

Einhorn's Duodenal Saline Treatment.—In his book on the duodenal tube, Einhorn states that the administration of large quantities of normal saline through a duodenal tube abolishes the clinical features of Raynaud's disease. I have confirmed this statement in several cases. The saline (0·85 per cent.) must be administered in sufficient quantity to produce fluid motions, should be boiled by way of sterilisation before use, and should be at body temperature when administered. The treatment is best carried out in the morning. A light breakfast may be allowed on waking. An ordinary stomach-tube or thin tube such as is employed for fractional test-meals or a long nasal tube may be used. It is unnecessary to make certain whether the tube has really passed into the duodenum; it is only necessary to see that the 28 inch-mark is at the level of the teeth and to get the patient to lie on his right side. Two pints of the saline are run in to begin with, and subsequently 1 pint every half hour until about 8 to 10 pints have been administered. The only precaution necessary is to make certain that the lungs remain clear, because it is possible to produce œdema of the lungs by this means. If the patient feels any discomfort from fullness during the administration less fluid must be given. This treatment may be carried out for four or five days in the week for a period of two or three weeks. In quite mild cases 2 pints of saline may be drunk in the morning.

It is of great interest to consider why this treatment is effective; the clue to this problem lies, I think, in an observation made by Sir Arbuthnot Lane, who removed the large intestine of a man with very bad Raynaud's disease. The case has been fully described by Mutch (*Brit. Jour. Surg.*, 1915, ii.. 608). For a number of weeks the symptoms completely disappeared, but they have since gradually returned. This suggests that there was something in the intestine that caused the condition, and this is borne out by the success obtained by Einhorn's treatment. The treatment is not a cure because the symptoms are apt to return, especially during the next spell of cold weather; but the patients I have treated have stated that their subsequent attacks have not been so bad.

Intravenous Injection of Radium Emanation in Normal Saline.—Another treatment just devised by Dr. Tominek, of Prague, of which I have no experience, attacks the disease at presumably the next stage—viz., by preventing the local action of the peripheral vasomotor nerves. He uses intravenous injections of radium emanation in normal saline. The dose is 2–3 millicuries, gradually increased to 15 millicuries. He suggests that the radium is antagonistic to adrenalin, which is responsible for the spasm.

Surgical Measures.

Surgical treatment of the disease would, naturally, only be considered in the most intractable cases. Two methods of procedure have been carried out.

(1) Leriche, in 1913, described the results he had obtained by removing the periarterial sympathetic fibres round the femoral artery, so that vasodilatation resulted, and the limb became warmer. Injection of alcohol round the artery is another method that has been used with the same object.

(2) Quite recently Davis and Kanavel, believing that the vasomotor fibres to the limb ran chiefly through the white rami into the spinal nerves, have removed the lower and middle sympathetic ganglia of the sympathetic chain of the neck. The lumbar sympathetic ganglia were removed by the lumbar or intra-abdominal routes when the legs were affected. They exclude, as far as they can, those cases where the vessel wall is diseased.

The first of these two surgical procedures has given good results in many hands. The operation has the advantage of being a relatively simple one. The method of Davis and Kanavel has only just been published, and very few cases have as yet been so treated.

Local Measures.

Since cold is, in most cases, the exciting cause of an attack of Raynaud's disease, it is important for the patient to wear appropriate clothing, especially in the winter time. More than the usual amount of underclothing is required in a bad case, and thick gloves made of a non-conducting material should be worn out of doors. They should not be tight enough to impede the circulation. Care must also be taken to keep the feet warm and free from damp. It is better to wear two pairs of thin socks, one over the other, than to wear a single pair of thick socks, because the air between the two layers acts as a non-conductor. Crêpe rubber soles on walking shoes are valuable in keeping out the wet.

Since heat as well as cold may bring on attacks, water for washing should be approximately at blood heat. An attack may sometimes be avoided in a young and vigorous subject by getting him to take a sharp walk, and by friction of the hands. Severe cases should stay at home in a warm room in cold weather. Friction of the hands is valuable, but if they are too painful for this it is still of value to rub the parts in the neighbourhood. Friction may also be combined with hydrotherapeutic methods, such as alternate hot and cold douches to the hands and feet.

In applying galvanic electricity the hands or feet should be put in warm salt water, and the negative pole placed in the bath. The positive pole is either applied directly to an unaffected part higher up, or to the neck, if both hands are affected, and in the bath. The strongest current that the patient can bear should be passed, and it should be frequently reversed. The patient should make voluntary movements of the hands under the water, and the treatment should be continued until the part becomes red. Finally the limbs are dried and well rubbed. High frequency and diathermy may also be of value.

Where gangrene has set in the parts must be treated on surgical principles. Since the gangrene is dry there is not much fear of infection, and dry dressings of boric lint or unmedicated sterile dressings should be employed. The hand may be kept for a time in a sling, and splints may be required. An oxygen bath, made by placing the limb in a wide mouthed rubber bag and filling it with oxygen, is a valuable method of treatment, not sufficiently employed. The mouth of the bag must be bound airtight on to the limb above the affected part. Amputation should never be carried out unless the whole end of the limb is becoming gangrenous. At most, bits of dead tissue may be snipped away with scissors. It is remarkable what good results are obtained with conservative measures, even when a part would appear to be extensively gangrenous.

Drugs.—Iodine or thyroid—the tolerance to thyroid is often great—nitrites, and nitro-glycerine may be administered. Ung. meth. salicylate, linimentum belladonnæ, and iodex may be applied externally. Warm fomentations—not too hot—are also of value. Where there is much pain it has long been customary to add opium to the fomentation.

Conclusion.

To sum up, in the milder cases simple local measures, such as rubbing the hands, bathing them alternately with hot and cold water, and wearing gloves, accompanied by large draughts of normal saline in the early morning, may be successful; but in the more severe cases, especially when gangrene threatens, the complete Einhorn treatment should certainly be adopted, and the oxygen bath used as a local measure.

E. P. POULTON, M.D. Oxf., F.R.C.P. Lond.,
Physician to Guy's Hospital.

Special Articles.

PROBLEMS OF MENTAL DEFICIENCY.

CONFERENCE OF THE CENTRAL ASSOCIATION FOR MENTAL WELFARE, DEC. 2ND–3RD, 1926.

(*Concluded from p. 1236.*)

AT the afternoon session on Friday, Dec. 3rd, Sir ARCHIBALD BODKIN took the chair and opened a discussion on

ENCEPHALITIS LETHARGICA AND ITS AFTER-EFFECTS.

He said that the importance of this mysterious disease could not be exaggerated. Not infrequently individuals suffering from its after-effects came into conflict with the law. It was clearly necessary that the law should be well defined, based upon well-known rules and administrable, but when it dealt with responsibility its hard and inelastic principles should be qualified so as to march level with the advance of skilled medical knowledge. He thought that the provisions of the Bill now before the House would help magistrates to deal with these cases more properly and more humanely.

Dr. A. F. TREDGOLD confined his remarks to the mental and social aspects of the disease. He quoted the official figures, showing that encephalitis was a prevalent disease; 5039 cases were notified in 1924 and 2635 in 1925, and undoubtedly many cases went unrecognised owing to the extreme diversity of clinical signs and the wide variations in severity. He had known cases reasonably diagnosed as influenza, cerebral tumour or hæmorrhage, chorea, epilepsy, hysteria, melancholia, confusional insanity, sunstroke, infantile paralysis, myasthenia gravis, multiple neuritis, and appendicitis. The disease might bring the patient into a grave condition in a few moments or never show any serious symptoms at all. Yet the mildest cases might be followed by the gravest physical and mental changes, including Parkinsonism, various forms of paralysis, and mental changes with or without delinquency. Statistics relating to the proportion of patients suffering from mental disorder during the acute stage, or as sequelæ to the illness, were very imperfect. The Board of Control had cognisance of 200 cases at the end of 1925; about half of these were below the age of 20, and about one-half of them remained unimproved. Many more cases were dealt with in Poor-law institutions. In the County of London alone there were hundreds of school-children whose mental functions had been seriously affected.

Delinquency.

There was abundant evidence that delinquency occurred in a large number of patients, much more in children than in adults. There might be little intellectual impairment beyond a weakness of memory and attention, but the whole disposition and moral nature were profoundly altered. The patient seemed to have lost all self-respect, wisdom, and moral sense. A child whose behaviour had previously been irreproachable would become a veritable little fiend. Many of them were indistinguishable from moral imbeciles. In a few cases the function of control was chiefly affected, and the child knew and felt he had done wrong, but was unable to stop his acts. The change might supervene immediately on the acute stage of the illness or after an interval of some months.

Pathological Basis.

There were certain marked changes found post mortem. The blood-vessels of the meninges, the grey matter, and the basal ganglia were engorged, and often there were many small hæmorrhages into membranes and brain-tissue and calcification of the vessel walls. Œdema was marked, sometimes so

extensive as to "waterlog" the whole brain. The nerve-cells were in various stages of disintegration, and clearly could not function properly. Where the frontal area was waterlogged lethargy would result; if the œdema were less severe there would be mental confusion, disorientation, false ideas, and excitement. When an impairment of function of the cells remained after the acute attack the result was varying degrees of intellectual weakness, loss of control, alteration of character, and misconduct. The type of lesion left by the encephalitis, the inherent nature of the child, and the extent to which it had acquired control over its innate antisocial propensities through training and home environment, were all factors which determined the form of the mental after-result. There was evidence that some cases gradually recovered, but in a considerable proportion the sequelæ would probably be permanent.

Mental Defect and Encephalitis.

It was wise to allow a reasonable time for improvement before certifying under the Act, and this raised a very important administrative problem. Only a few could be sent to special schools, and there were many in urgent need of special establishments, such as the one recently started by the M.A.B. Prison was worse than the asylum or the institution for defectives. Provision should also be made for investigation and report before sentence upon such cases when they came before the courts.

Dr. F. C. SHRUBSALL related the symptoms and history of the present epidemic, and estimated the proportion of cases in which sequelæ occurred as roughly 30 per cent. of those notified. Out of 193 cases which had been followed up in London, 48 showed impairment of sleep, 24 had paralysis, 22 had twitchings, tremors or fits, 12 had ocular symptoms such as squint, 47 showed impairment of intelligence, and 96 changes of conduct. He emphasised the danger to the public, and the necessity in all cases of encephalitis, whether epidemic or not, of taking immediate action to secure careful treatment and to avoid any irritation due to clashing of personality in the home. The stage of irritation and lack of concentration demanded considerateness combined with uniform and consistent control. Parents were only too liable to overlook this phase and let the child discover that he could get what he wanted by rebellious conduct. Directly the acute phase was over, parents might pet the child overmuch and laugh at fits of petulance; a little later they would chide him severely for just the same thing. The child unconsciously resented this change, and so on a basis of increased irritability there would be built up a superstructure of neurosis. Usually mental deterioration and growth went on simultaneously, so that the only obvious sign at first would be the slowing down of the rate of growth, coupled with return to a more infantile form of emotional reaction. As a rule some mental faculties were considerably retarded or disordered, while others were little affected, so that there was great variability. In adults the mental disorder was more obvious. Medico-legally the position of the post-encephalitic, in relation to responsibility, more closely resembled that of the insane than that of the ament. To him the excuse of "irresistible impulse" might be more justly applied than to any other class of persons. In some cases they could foresee the consequences of their act, but simply did not wait to reflect; in others they made no effort to control their actions. They wished to occupy the centre of the stage at all costs. Many of them reacted satisfactorily to steady discipline. He regarded encephalitis lethargica as one variety of some general underlying disease of which epidemic influenza might be another type, the same causes leading to both. Possibly the same infective agent could cause different symptoms in other individuals, just as, conversely, encephalitis could be caused by many different infections. The post-encephalitic moral delinquency resembled what happened to everyone after a bad cold: they were like "bears with a sore head," but for some hours only.

Discussion.

Dr. E. MAPOTHER said that to offer a woman a lifelong separation from her husband and children was not an ideal solution. Many encephalitic patients had committed suicide, and a number of them might have been saved by encouragement. Among the many difficulties that beset the whole problem were the obscurity of the onset of the disease, and the lateness of the onset of the sequelæ. Diplopia was becoming less common as a characteristic feature, and the attack less easy to identify. Symptoms, in his opinion, might appear up to four or five years after the first attack. The appropriate use of existing arrangements was more likely to solve the problem than special institutions, which could not be properly adapted to deal with all the varied sequelæ. Encephalitics needed the same measure as mental patients—the voluntary admission into mental hospitals. It was difficult to get them sent there, because to regard an individual as a mental case a magistrate wanted evidence of disorder of intellect, which was exactly what these cases did not show. Our ideas on criminal responsibility needed revision, and would not obtain it until every first offender was seen by a doctor before sentence.

Dr. W. R. K. WATSON said that the marked case of encephalitis was not responsible for his acts, but there were all degrees up to complete responsibility, and it was very hard to know where to draw the line.

Mr. J. W. FLINT and MRS. A. L. SHAVE pleaded for special accommodation for these cases, to save them from the stigma of being certified and removed to institutions under the Lunacy or Mental Deficiency Acts.

Mr. R. W. BLACKIE said that only one of the many cases before the Birmingham magistrates had been certified under the Mental Deficiency Acts, and none had been put in prison. He asked if these children could not be specially earmarked and watched when in mental deficiency institutions, with a view to liberation after a few years.

Dr. E. H. T. NASH spoke of the difficulty of diagnosis, and pointed out that the severity of the acute stage was no criterion of the severity of the sequelæ.

Dr. F. D. TURNER assured the meeting that there was no danger of post-encephalitic cases being wrongly retained in mental deficiency institutions, emphasising the fact that these children are "possessed of the devil." He suggested that they were probably best in ones and twos amongst other children, and not massed in a special institution. He had found that they often deteriorated physically as they improved in conduct.

Dr. TREDGOLD agreed with Dr. Turner that post-encephalitic cases earmarked themselves, and repudiated the suggestion that they could ever be herded unclassified for life in a modern mental deficiency institution.

POST CERTIFICATE SCHOOL FOR MIDWIVES.—Mr. Neville Chamberlain has consented to open the new building in connexion with the Post Certificate School in Camberwell on Feb. 8th, 1927.

THE Papworth Press, Cambridge, announce the forthcoming publication of "The Significance of Temperature Variations in Tuberculous Disease," which is, according to the subtitle, a study in continuous and quasi-continuous temperature records of man and animals in health and disease. The book is a reissue of papers which have appeared in THE LANCET under the signatures of the late Sir G. Sims Woodhead and Dr. P. C. Varrier-Jones, together with the results of Dr. Varrier-Jones's further experiences at Papworth. It is unique in that it has been printed and bound, and will be published by, the consumptive ex-patients in the printing department of the Papworth Village Settlement.

REOPENING OF THE WELLCOME MEDICAL RESEARCH BUREAU.

RESEARCH AND CITIZENSHIP.

ON Dec. 8th Mr. Neville Chamberlain, the Minister of Health, reopened the Wellcome Bureau of Scientific Research, which has been reconstructed and enlarged. The building is in Endsleigh-gardens, London, N.W., and offers excellent facilities both for research and instruction. Individual workers who wish to follow any particular line of investigation are given accommodation and help in their studies, whilst an immense amount of information is made available to the medical and allied professions by means of a specialised reference library and a comprehensive museum.

The Bureau was founded in 1913 by Mr. Henry Wellcome, and is affiliated to the other institutions in London which bear his name. It contains 12 research laboratories, whereinvestigations may be made in all branches of pathology and parasitology, but especially in tropical medicine and hygiene. The Museum, which is arranged in 20 small halls, aims at a general survey of disease, and is open to all medical men and students, and also to laymen introduced by a registered medical practitioner. Teachers are invited to make full use of it for purposes of demonstration, and arrangements can be made for them to bring classes of students. Much of the success of the exhibition, as Dr. S. H. Daukes, the Director, points out, is due to the coöperation of medical men in various parts of the world, and it is hoped that their help will continue so that the Museum may become even more complete.

WELLCOME MUSEUM OF MEDICAL SCIENCE. [*Copyright.*

Owing to the unavoidable absence of Mr. Wellcome in America, the proceedings were opened by Dr. C. M. Wenyon, Director-in-Chief of the Bureau, who introduced Mr. Chamberlain. In formally declaring the Bureau and Museum reopened, Mr. Chamberlain referred to the extraordinary acceleration of medical progress in comparatively recent times. The reason of this acceleration, he said, could perhaps be found in the fact that knowledge was now so rapidly spread from one part of the world to another. In the old days a new discovery seldom reached much beyond the immediate environment in which it was made, but to-day every advance was immediately registered and imparted to everyone who was interested throughout the world.

The Museum which he was to reopen, continued Mr. Chamberlain, was of unique and remarkable character. The labour brought by Mr. Wellcome to its perfection must have been inspired by a belief in research and education as the two greatest factors in helping mankind to overcome their infirmities. It was over 30 years since the Research Laboratory in Physiology was founded, and that had been followed by the Laboratory of Chemical Research. Much more recently Mr. Wellcome had instituted the Entomological Field Laboratory, and now all these various institutions, together with the Historical Medical Museum, were affiliated to the Medical Research Bureau.

This building, then, was the headquarters of the whole system of scientific research in which Mr. Wellcome had interested himself, and contained, also, the means of spreading and promoting education amongst students and teachers. The method of instruction adopted was pictorial, and the drawings, paintings, photographs, models, and actual specimens must present a picture of a vividness and impressiveness which perhaps could not be excelled by any other method of demonstration. The collection was, he thought, unparalleled in any medical school — certainly in this country, and probably in the world. It dealt not merely with the diseases of temperate climates, but also with those of the tropics, and exhibited their causes, symptoms, treatment, and prevention with a completeness which was altogether unexampled. If, indeed, the great advances in medicine and surgery were largely due to the spread of knowledge from the one to the many, then everybody must agree that Mr. Wellcome was a great public benefactor in making available this epitome of all that science had hitherto achieved in this domain.

Sir Walter Fletcher, F.R.S., Secretary of the Medical Research Council, then delivered an address on Research and Citizenship, in the course of which he said that the Bureau and its associated laboratories, considered as a single organisation, had already taken its place as one of the important centres of medical research work in this country. Almost from its beginning original and fruitful scientific investigations had been conducted within its laboratories, and the results had been freely published in the technical scientific journals. This successful work, past and present, was due to the able men who by aid

of this organisation had found their opportunities. To his mind the special interest of the Wellcome organisation, looking at it from a national point of view, was its origin and the particular mode of its financial support. They illustrated some real problems of the economics of research work and of its place in national life. For research it was necessary to have leisure and materials. The history of scientific research, as known to-day, had been worked out in highly organised capitalistic communities. In this and other countries it had, in fact, depended during the past centuries not upon any enlightened and far-sighted support given to it by the general community, but upon the accidents of the distribution of wealth—upon private patronage, upon the endowments of universities, and sometimes upon the personal possession of wealth by the investigator. The nineteenth century had come and gone without making much change in this system of *laissez faire*—in spite of the great wealth of the country and the rise and development of industries which had owed their very existence to science. Accident was allowed to decide whether the right conditions should be found for investigation, and when discoveries turned up they were only slowly utilised. The land-owning and governing class showed what Gibbon described as "the proud ignorance so dear to a polished people." The new rich grasped at the immediate opportunities of wealth and became practical men who, as Disraeli reminded them, were practical in that they practised the mistakes of their ancestors.

As the present century opened, continued Sir Walter Fletcher, our relative decline in trade, and the capture by other countries of industries native here, had begun to teach the lesson—a lesson driven home during the war. This first quarter of the new century had seen great changes, and during the same period the great manufacturing firms had increasingly realised that not only their success but their existence depended upon the progressive work of discovery and its application. The manner in which business firms established and used their research departments varied very widely. Commercial enterprises had forwarded the development of scientific work in three ways: (1) Private fortunes made in commerce had sometimes, though far more rarely than might be expected, been devoted to the support of research work. (2) Commercial profits might be used to promote research; the firm might directly support scientific research work relevant to the objects of the business, the results gained being exploited for private interests. This kind of work was not likely to encourage fundamental discoveries or to attract and keep men capable of making them. Lastly (3), a few firms had adopted the plan of supporting scientific work and leaving their workers as free to follow their own line and to publish their results as men in any University laboratory. This method was not exclusive of the former method, and might be additional to it. The Wellcome Bureau and laboratories were supported under this system, and the firm which controlled them might take legitimate pride in the results given to the world.

Going on to speak of the Museum and Library, Sir Walter Fletcher described them as forming together a sumptuously illustrated text-book. In chosen parts of the subject a student might learn more from a quiet hour in one of its divisions than he was likely to gain from any ordinary formal lecture of the schools. The Museum also had a large usefulness for the instruction of intelligent laymen. A former Minister of the Crown, now in high administrative office overseas, had told him that a visit paid to the Museum had given him his first really vivid impression of what scientific work had done and might still do for the peoples of our Empire. It had aroused for the first time his enduring sympathy and interest. The work of science could only have its full effect in the welfare of the people by the steady growth among the general body of citizens of sympathy with its methods and faith in its powers. It ought to be a proper part of citizenship to understand something of the difficult path the pioneer investigator had to follow, and to see something of the processes by which a discovery came into practical application. Only the dull or uninformed could enjoy material benefits without caring to know anything of the paths by which they had come and of the hands that gave them. Such knowledge, in one field of science, was made easy of reach by a Museum like this. Material benefits, however, did not form the highest gain received by the pursuit of natural knowledge. The work of the Bureau, Laboratories and Museum was twofold—that of increasing "God's honour and bettering man's estate."

At the conclusion of the address, Sir John Rose Bradford, President of the Royal College of Physicians of London, proposed a vote of thanks to Mr. Chamberlain and Sir Walter Fletcher. This was seconded by Sir John Bland-Sutton, Past-President of the Royal College of Surgeons of England, and was carried with acclamation. Sir James Kingston Fowler proposed a vote of thanks to the Founder, which was seconded by Prof. T. R. Elliott, and in Mr. Wellcome's absence was acknowledged by Dr. Wenyon.

MEDICINE AND THE LAW.

Colonel Kynaston's Appeal: Remarkable Sequel.

THE prosecution of Lieut.-Colonel Kynaston, R.A.M.C. (retired) under the Dangerous Drugs Act, 1925, has had a sequel which must be almost unique. The Act of 1925, it appears, is not yet in operation, and, presumably, other persons who have been convicted thereunder will now be relieved of the penalties imposed upon them. Lieut.-Colonel Kynaston, it will be recalled, was lately convicted at the Central Criminal Court of aiding and abetting a patient (whom he was treating for catarrh) to obtain medicinal opium contrary to the Act (the accused being no longer a registered practitioner). His defence, so far as a newspaper summary gives a fair indication, consisted of two main points; one of these was irrelevant and the other was wrong as a matter of law. His irrelevant point was that his name had been wrongly erased from the Medical Register and that he was unjustifiably deprived of his qualifying degrees by the colleges which had conferred them. His other main point was that he was still qualified if not still registered, and that thus, if the enactment under which he was prosecuted used the words "duly qualified medical practitioner," he was still within its terms. This contention was untenable in law because Section 34 of the Medical Act of 1858 makes it clear that the words "legally qualified" or "duly qualified" medical practitioner, if used in any Act of Parliament, mean a practitioner registered under the Medical Act. Colonel Kynaston, having been fined £10, took his case to the Court of Criminal Appeal, where he raised various points which, apparently, left the judges unmoved. Then there was a dramatic surprise. Counsel for the prosecution got up and announced that he had just discovered that the 1925 Act was not yet in force. It was (under Subsection (3) of Section 7) to operate on such date as His Majesty should by Order in Council appoint. No Order in Council had ever been made, and counsel's effort to support the conviction as justified under the previous law was not permitted by the court. The Lord Chief Justice made some pleasant observations upon the ludicrous situation thus disclosed, and the case terminated inevitably with the quashing of the conviction. Lord Hewart stated that the appeal had no real merits, but, as the Act under which the prosecution had been conducted was not in force, the proceedings "resembled nothing so much as pulling a bell-handle without a bell at the other end."

The incident illustrates the danger of the modern practice—otherwise found so convenient—of putting masses of legislation on the statute-book with a postponement clause by which a particular enactment does not take effect until the administrative arrangements

are complete and until the Privy Council or some other authority presses the button. Neither side comes out of the case with much credit. The Home Office has stultified itself in a manner unparalleled in that otherwise so shrewd and careful Department of State. Colonel Kynaston escapes on a point which was, presumably, as great a surprise to himself as to everyone else. His offence against the Dangerous Drugs Acts—as has previously been stated in this column—was trivial in the extreme; but the quashing of his conviction still leaves him exposed to the charge of signing a prescription with a claim to degrees which he no longer possesses.

Milk Bottles Filled in Street.

Fines of 20s. each were inflicted by the Brighton justices on Dec. 9th on a milk roundsman and his employer, the former for delivering bottles which had not been filled and closed on registered premises, and the latter for aiding and abetting, or alternatively delivering the milk by his agent. The 1926 Order, under which the proceedings were taken, makes it illegal to fill bottles in the street. In this case Dr. Duncan Forbes, medical officer of health for Brighton, saw the milk roundsman filling bottles in the early morning from a can and capping them with caps which he took from his pocket. The pocket was convenient for holding the caps, he said, when questioned. The man's employer said that so far as he was aware all the bottles were filled before they left the dairy, and that the regulations had been explained to all his employees.

At a session of the Bombay Medical Council held on Sept. 20th the name of Mr. Joseph Michael Pereira, M.B., C.M. Edin., 1894, was erased from the Register, following the Council's decision that he had been guilty of infamous conduct in a professional respect by issuing sick certificates in a case in which he had not been in personal attendance on the patient during the period covered by the certificates. At the same time a practitioner holding Indian qualifications received similar sentence under the Bombay Medical Council. Mr. Pereira's name, it would seem, has not appeared on the Register of the General Medical Council of the United Kingdom.

The Home Secretary gives notice that he has withdrawn from Mr. Frank Allday, L.D.S., of 26, Charing Cross-road, W.C., the authorisation to be in possession of dangerous drugs or to supply them on prescription.

PARIS.

(FROM OUR OWN CORRESPONDENTS.)

Infantile Mortality in Hospitals.

THE high death-rate amongst babies in French hospitals—it has been estimated at 35 per cent.—can be accounted for in several ways. The children come to hospital in so bad a condition that they often die in the first five days after admission. For the most part they are under-nourished and have been bottle-fed; furthermore, they are taken away from their mothers. Naturally enough the mortality amongst those who come into hospital with their mothers and are breast-fed is not so high—perhaps about 26 per cent. Infants stand badly a long stay in hospital, and often end by taking some infection or by wasting away. With the idea of reducing this mortality, Dr. C. Lesné advises that as far as possible children should not be taken into hospital; that more clinics for infants should be set up; and that babies should be treated more at home, assistance being given to the mother by visiting nurses. For those acutely and dangerously ill and those who are quite incurable, treatment in hospital is necessary. There should, however, be more wards into which the mother can be admitted with her child, and wet nurses ought to be provided for those who cannot get their mother's milk. Every child, says Dr. Lesné, should be kept strictly isolated, and there should be a specialist staff large enough and skilful enough to take the necessary precautions against spreading infection from one child to another. The stay in hospital should be as short as possible, and it is wise to have a convalescent home in the suburbs where babies can go if their health is still too precarious for them to be sent out into the country.

Sarcoma of the Œsophagus.

Compared with epithelioma, sarcoma of the œsophagus is a rarity, and it is quite exceptional to be able to diagnose the condition during life. Dr. Guisez, of Paris, reports the case of a man of 54 who had a tumour of the middle third of the œsophagus which caused more or less complete stenosis. Microscopical examination of a portion of the growth removed at œsophagoscopy showed that it was a spindle-celled sarcoma. Radium was applied locally and the tumour rapidly disappeared, so that the patient was able to swallow normally for a period of ten months, after which, however, the sarcoma recurred lower down, and proved less amenable to radium than before.

Dangers of the Geyser.

Dr. Georges Luys has been pointing out the risks of using gas geysers in bath-rooms. There are, he says, two dangers: First, the high content of carbon monoxide in illuminating gas, and secondly, the possibility that products of combustion may escape into the room without being noticed. The geysers may apparently be working well; they produce hot water; there is no smell of gas; yet, nevertheless, a flue may be blocked. It is thus absolutely necessary that geysers should often be inspected to see that they are working properly and that the fumes can escape through the proper channels.

Arsenic and Grapes.

Prof. E. Ledoux, of Besançon, has recently reported some cases of arsenical poisoning due to drinking wine made from grapes which had been treated with insecticide made from arseniate of lead. Care had not been taken to comply with the regulations which forbid powdering of the vines with arsenicals after they have flowered, and the wine in question contained a large amount of arsenic.

Hospital Risks.

No provision is made against occupational risks—infections, accidents, and disease—incurred by the staff in hospitals administered by the French Government. Prof. Mougeot, charged with the duty of examining the matter anew, has reported that all efforts made as yet for obtaining just compensation for accidents have wholly failed, and advises that special legislation should be secured at once.

Observations on the Duodenum.

Dr. Maurice Delort, of Paris, has lately drawn the attention of the Society of Medicine to a special method of radiological examination of a loop of intestine between two points of compression. His work has been done on the normal duodenum. The method consists of stopping, or rather slowing, the flow of duodenal contents by compressing the duodeno-jejunal junction by means of a special abdominal belt fitted with pneumatic pads. Dr. Delort was able to show clear pictures of the distended duodenum, and his technique appears to give the observer an improved chance of drawing conclusions about the condition of the viscus.

Barbituric Derivatives.

Kohn-Abrest and Pissot have reported on an investigation of veronal and other members of the barbituric group of analgesic and hypnotic substances. The toxicity of these compounds, they point out, varies considerably, and depends mainly upon renal function. Veronal, for example, may be given safely in doses reaching 14 g., provided the kidney be perfectly sound, but where renal function is impaired, doses of less than 1 g. may be very dangerous. In determining whether the quantity of veronal and

similar compounds found post mortem suffices to explain why death has taken place, the general state of the patient—and especially the renal condition—must be carefully considered.

The Milk Supply.

The French National Society for encouraging agriculture is proposing to form a committee for improving dairy products and for securing effective inspection of dairies, byres, and establishments. Producers willing to permit inspection will be entitled to obtain higher prices for the milk sold under sanction of the society and also of the Ministry of Agriculture. This plan resembles very closely the plan under which so-called certified milk is marketed in the United States.

The *Syndicat*, or union of French Surgeons, has decided that patients able to pay for surgical services ought not to have free hospital treatment and care, and are drawing up a tariff of fees. They consider that surgeons should be paid directly and without intermediate official relations.

The French Ministry of Labour and Hygiene is investigating the manufacture and handling or radio-active substances so as to devise measures fof protecting those engaged in certain industries.

A centre for mental prophylaxis in childhood, directed by Prof. Roubinovitch, has been established at Vanves, near Paris. Post-graduate classes will be held at the centre.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Synthaline.

AT a recent meeting of the German Society for Diseases of the Digestive Organs and Metabolism Dr. Frank, of Breslau, reported on a derivative of guanidine, called synthaline, which has been shown to produce hypoglycæmia. Its effect is slower than that of insulin, but of a longer duration because of the cumulative action of guanidine. The advantage of the preparation is that it may be administered by the mouth ; the drawback is that the appetite suffers and that sometimes the drug causes vomiting and diarrhœa, though never in a dangerous form. Severe cases of diabetes, especially those in which coma is threatening or the patient is actually comatose, will, as before, belong to the domain of insulin, though by giving synthaline along with it the number of injections may be lessened. Prof. Richter, of Berlin, confirmed the results obtained by Dr. Frank by his experience in 25 patients, and so did Prof. Umber and Prof. Strauss.

Iodised Salt and the Prevention of Goitre.

In Switzerland the administration of iodised salt has proved very useful in the prophylaxis of goitre, and some good results of its adoption in Germany have now been described by Dr. Sepp, a medical man residing in a goitre district in Upper Bavaria. He found that in the local sick club the sick-rate from all causes was little affected by the use of iodine, varying only from 286 to 234 cases a month, but the figures for goitre showed considerable reduction. In the period between the first quarter of 1923 and the third quarter of 1924, 320 of 1789 patients suffered from goitre, whilst in the period between the fourth quarter of 1924 (when the salt was first introduced) and the second quarter of 1926 only 87 of 1743 patients had goitre. The constant decrease is indicated by the fact that in the last quarter of 1923 22·6 per cent. of all the club patients suffered from goitre, whereas this percentage had fallen in the last quarter of 1924 to 7·2 and in the second quarter of 1926 to 3. No case of thyroidism occurred in club patients, as they did not take more iodine than the doses supplied to them, but a number of cases were observed in private practice where patients had, at their own expense, indiscriminately swallowed larger doses of the compound.

Public Health Services.

DOCTOR REFUSES SCHOOL CERTIFICATE.

A CASE of some interest to practitioners has recently been reported in the *Wolverhampton Express*. A parent was summoned by the local education authority for not sending a child regularly to school, and called, as a witness for the defence, the doctor who was attending the child. The doctor is reported to have said that the child had been suffering from pneumonia and whooping-cough, and later had had an operation for the removal of tonsils and adenoids ; he had refused on principle, however, to sign a certificate, as, since education was compulsory, he did not see why parents should be forced to pay for a medical certificate. In making this apparently reasonable objection, the doctor does not seem to have taken into account the legal position of the local education authority. Section 42 of the Education Act, 1921, enacts that it is the duty of the parent of every child to cause the child to receive efficient instruction in educational subjects, and Section 43 states that it is the duty of the local education authority to see that this duty is performed by the parent. The onus for presenting the child at school rests, therefore, on the parent, and in the event of a child not attending school the parent must convince the local education authority that his consent for the non-attendance of the child has been reasonably withheld with the bona fide intention of benefiting the child. The most effective proof of bona fides that a parent can produce is a medical certificate of unfitness.

Although the statutory obligation of the authority is clear, action is not taken without sufficient cause, such as the prolonged absence of a child from school and the repeated refusal of a parent to produce a medical certificate or to present the child for examination by the authority's medical officer. In this case the authority's representative, in the person of the attendance officer, had called eleven times at the child's home, and no proof of the child's unfitness to attend school was produced. The authority, therefore, could hardly do otherwise than have the case settled in court.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are some of the statistics for 1925 of three cities :—

Name of city.	Estimated mid-year population (R.-G.).	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.	
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Heart disease.	Infant mortality.	Maternal mort. from childbirth.
Sheffield ..	526,900	17·7	11·5	0·99	1·32	2·3	1·5	84	4·9
Hull	297,300	21·8	13·2	1·26	1·16	2·9	1·2	93	4·8
Cardiff ..	227,300	20·6	12·8	1·53	1·09	2·3	1·7	92	4·5

Sheffield.

Dr. F. E. Wynne records an outbreak of small-pox during the last quarter of the year, which originated with two unvaccinated boys who contracted the infection while staying in Middlesbrough. Both boys had mild attacks, for which no doctor was called in, and which were regarded as chicken-pox. One of them returned to school, and other cases arose at the school. There were 44 cases up to Dec. 31st, all traceable to the two original ones. (The patients were none of them protected by vaccination—i.e., they were either unvaccinated or adults vaccinated in infancy only.) Although up to the end of the year there were no fatal cases, several of the victims were

dangerously ill, and will be scarred and disfigured for life. This, says Dr. Wynne, disposes of the theory that the mild type of small-pox is a new disease and always breeds true. Referring to the exceptional industrial depression and unemployment, Dr. Wynne points out that there has been no set-back in the public health, and attributes this to the much better organisation of relief under modern conditions. He thinks, however, that if in the immediate future there is a general resumption of employment there will be an unheard-of loss of time and wages as the result of industrial fatigue among men who are out of training, and this will be reflected in the sickness-rate of the country during the first period of resumption.

The Sheffield system of sewerage disposal by bio-aeration, devised by Mr. Haworth, is being extended. Five years ago there was only an experimental tank in operation. Now 8 to 10 million gallons of sewage are being treated daily.

There was a fall in the notification of encephalitis lethargica after the severe outbreak of 1924, when there were 337 notifications and 40 deaths. The notifications in 1925 numbered 54 and the deaths 21. During 1925 Sheffield had the lowest death-rate from pulmonary tuberculosis of any of the 17 provincial towns with populations exceeding 200,000, and for all tuberculosis it was a close second to Bradford. Dr. Wynne thinks that the silicosis regulations have done much to reduce the mortality in the various classes of grinding and abrasive industries. Nevertheless, he would like to see the abolition of the little, dark, insanitary "wheels," and the substitution of well-equipped large factories. During the year ending March 31st, 1926, the number of houses completed was the largest in any year since the war—namely, 2178, of which 1361 were erected by the corporation. The overcrowding in the city is still deplorable, and there is a waiting list of 2822 for municipal houses. The scheme for the conversion of privies into water-closets made unusually rapid progress. Nearly 2000 were converted.

Dr. John Rennie, the chief tuberculosis officer, reports that the dispensary is being well used by the medical profession for diagnostic purposes. In over 70 per cent. of the notified cases the patients were sent to the dispensary prior to notification. Thus a large proportion of cases are being discovered at an early stage. The X ray apparatus has proved invaluable, and 1726 skigrams were made during the year. There were 1356 contacts examined. The names of all children of school age who are known to have been exposed to infection in their homes are supplied to the school medical officer, in order that they may be kept under observation during their school-life. In six cases tubercle bacilli were found in the sputum of school-children. The surgical tuberculosis officer, Dr. C. Lee Pattison, gives a table showing that out of 104 deaths from non-pulmonary tuberculosis 46 were due to meningitis, 21 to intestinal tuberculosis, 10 to spinal disease, and only 4 to disease of other bones and joints. Dr. Pattison also reports that the cases are being brought under treatment at an earlier stage. Thus, as superintendent of the Rivelie Hospital (run on the same lines as Alton), he finds that the average duration of stay was only 324 days as compared with over 700 days during 1919 and 1920. Also during the first few years after this hospital was opened there were always about 50 patients waiting for admission, whereas now 30 of the 130 beds are not needed for Sheffield children, but are used, with the sanction of the Ministry of Health, for children from outside areas. Dr. Pattison finds that ultra-violet light treatment causes definite improvement in enlarged cervical glands, and that most cases of lupus show improvement, some of them to a very marked extent. Selected cases of bone and joint disease improved "but in many the cure of the patients did not advance more rapidly than that of those treated by other methods."

The veterinary inspector, Mr. J. S. Lloyd, reports that of 909 samples of mixed milk coming in to the city by road or rail 91, or 10 per cent., were tuberculous. In following up the samples 100 farms were visited. At 57 of these farms 59 tuberculous udders were found. At the remaining 43 farms no tuberculous udders were found, and the subsequent control samples of the mixed milk proved to be negative. In most of these 43 farms cows had been sold during the period of waiting for the result of the biological test. Within the city there are 2539 stalls for milch cows, and in these stalls 20 cows with tuberculous udders were found during the year. Only three of the tuberculous cows were lost sight of, the remainder were slaughtered. Mr. Lloyd again emphasises the value of the direct microscopical test. Thus during 1925 37 country cows and 10 city cows were found to be suffering from tuberculosis of the udder by the microscopical examination alone. These 47 cows were removed from the milch herds and slaughtered without having to wait for the biological test. The mixed milk of the herds was, therefore, freed from infection about a month earlier than in those cases where resort had to be made to the biological test.

Hull.

Dr. W. Allen Daley reports a big spurt in the work of getting rid of the privies and pail closets in the city. It was begun in 1921 with the conversion of 183. In the four subsequent years the numbers converted have been 594, 1598, 5163, and 8555. Over 16,000 of the 41,000 to be dealt with had been converted up to the end of 1925. The Health Committee employ a whole-time salesman, whose duty it is to find customers for the night soil, which is sold for manure to farmers, market gardeners, and allotment-holders. Over half of this material is carried into agricultural areas outside the city in the carts in which it is collected.

Hull Fair is an annual institution that owes its inception to powers contained in the first charter granted to the town by Edward I. in 1299. It lasts for six days in October, on a site covering 13½ acres, and is visited by tens of thousands of people. In 1925 there were 245 vans and four tents on the fair ground, occupied by 566 adults and 204 children. The sanitary inspectors make daily visits, and temporary sanitary conveniences are provided. No overcrowding was discovered, and the only known cases of sickness were a case of pneumonia and a case of pleurisy. Hull had the first municipal crematorium, opened in 1901. During the last five years cremations have averaged about 44.

In 1920 it was estimated that 5000 houses were needed to meet the arrears of the war years and the years before the war. Since that date 2157 houses have been erected, of which 1475 provide for the increase of the population since 1920. As, however, many houses have been demolished in these years, arrears have only been reduced by 282. The corporation have three housing estates on the outskirts of the city, comprising 328 acres, of which over 20 are outside the boundaries. At the end of 1925 on these estates 1032 houses had been completed, 510 were in course of erection, and contracts for 498 had been let. Two steel (Braithwaite) houses have been put up on the West estate, and contracts have been let for 442 houses of special concrete or concrete and steel frame construction. If the present acceleration in the rate of building is maintained the shortage should be eased in a few years, but it may prove necessary, says Dr. Daley, to build houses of a less costly type. Over 80 per cent. of the houses in the city are of the working-class type, which Dr. Daley divides into the artisan type (43 per cent.), the inferior terrace type (33 per cent.), and the slum houses (4 per cent.). The privy conversions have greatly improved the second class . . . "as under the old system the contents of the privy had to be carried through the kitchen, often during the breakfast hour." The slum houses include about 500 of the back-to-back type, and are old and poor in structure. Demolition is the only remedy. Owing to the shortage of houses no further action has been taken with regard to the seven unhealthy areas covering about 28 acres and comprising 1784 houses, which were reported in 1919. One area has been

proceeded with, and will displace the 721 occupants of 182 houses, for whom the provision is being made of 145 "parlour" houses on the East Hull estate, two miles away from the area. Owing to the unlikelihood of the dispossessed tenants taking up houses so far from their work, a scheme is now under consideration for the erection of three blocks of four-storey flats on a portion of the original area.

There is one retailer of Grade A milk and one licensed dealer in pasteurised milk. In September it was decided to get Grade A milk for the two city hospitals from a producer in the East Riding. Twenty-seven samples of milk were examined for tubercle, and two gave a positive result. During 1925 there were 22 notifications of encephalitis lethargica and 20 deaths. An outbreak of small-pox occurred in the latter part of the year and continued until March, 1926. There were 59 cases in 1925 and 35 in 1926. The disease was of a mild type, and caused no deaths. The source ofthe original infection was never discovered. The tuberculosis training colony, from its inception in 1919 to the end of 1925, trained 108 Hull residents (105 men and 3 women). Of the 108, 76 were at work at the end of the year, and 40 of these at the vocations for which they had been trained. On the other hand, of the 12 Hull men sent to other colonies to be trained under the Government scheme, only one is working at the occupation for which he was trained. The scheme for the prevention of crippling has received much consideration, and as a result six beds will be taken at the Yorkshire Orthopædic Hospital at Kirkby Moorside for a trial period of six months; the residential beds at the school for cripples will be increased from 18 to 24, and non-tuberculous cripples will be admitted at any age from 2 to 16; and a clinic under the direction of an orthopædic surgeon will be established as a clearing-house. The figures for venereal disease indicate that much gonorrhœa in women is untreated. Thus during the last two years there have been about two cases of syphilis to three of gonorrhœa among males, whereas among females there are two cases of syphilis to one of gonorrhœa. When the new clinic has been completed there will be a separate session conducted by a woman doctor for women and children innocently infected. Midwives attended about 64 per cent. of the births, and sent for medical aid in 22·7 of their cases. Preventive midwifery is making progress. Thus at the clinic conducted by Dr. Ethel Townend there were 602 new patients. Forty-six malpresentations were corrected by external version, 12 cases of disproportion were sent in to the maternity home for induction of labour, and two cases of severe pelvic contraction were sent to the Hull Royal Infirmary for Cæsarean section. On the other hand, the unsatisfactory results of emergency Cæsarean sections was demonstrated by five such cases admitted to the maternity home. Two of the mothers died and four of the children were stillborn. In an appendix Dr. Katherine Gamgee submits a report on two years' working of the artificial light clinic. Over 300 cases were treated, and Dr. Gamgee's conclusion is that in a large industrial area such a clinic should prove of very great value in the treatment of rickets, malnutrition, and anæmia of children of all ages, for the prevention of early disease in young children, and for dealing with children who are not making progress at the ordinary centres.

Cardiff.

Dr. Ralph M. F. Picken thinks that the relatively high standard of health maintained during this period of trade depression is due to the efforts of the guardians and to the unemployment insurance funds. Referring to the steadily increasing mortality from cancer he thinks that the increase is a real one in Cardiff. The local investigation as to the end-results of operations for cancer of the breast confirms the general conclusion that results are excellent, given early diagnosis and early operation. Cardiff holds a bad position for tuberculosis, and had the highest rate from pulmonary tuberculosis among the 17 large provincial towns during 1925. Dr. Picken emphasises the fact that the number of beds for advanced cases is inadequate. He also points out how much more satisfactory it is to prevent tuberculosis than to attempt to cure it when it has become manifest. Thus while 63·6 per cent. of the cases of pulmonary tuberculosis notified in 1925 were alive at the end of that year, only 7·4 per cent. of those notified in 1915 and still known to the department have survived. Open-air schools, open-air teaching, more attention to physical culture and the teaching of hygiene in the schools, more seaside homes for debilitated children, and the use of artifical sunlight during the winter are some of the preventive measures which he advocates. At the centres for venereal disease 34 per cent. of the patients ceased to attend before the final tests for cure. As might be expected, the default was highest among the seamen—namely, 43 per cent. A statement shows where 494 seamen contracted their infection. Of the 80 cases recorded against Wales 73 were infected in Cardiff, 49 were recorded against England, 25 against the Argentine, 73 against France, 15 against India, 21 against Italy, 29 against Spain, and sc forth; but the record is rather a measure of the amount of trade than of the prevalence of venereal disease in those countries. The new clinic for women and children was opened in the last week of 1925, and the attendances up to date showed that it is serving a section of the public not provided for hitherto. The antenatal clinic, under the joint management of the health department and the infirmary, became firmly established in December, 1924, and the other antenatal clinic has been transferred to more satisfactory premises. The new cases attending increased from 325 in 1924 to 815 in 1925, and the quality of the antenatal service has improved in proportion to the improvement in premises and equipment. The corporation now pays £1200 per annum to the maternity branch of the Royal Infirmary instead of paying for individual patients. During 1925 the cases admitted to maternity beds numbered 461; 349 were sent through the antenatal clinics, 48 complicated cases were sent by general practitioners, and there were 64 other Cardiff cases. On Nov. 3rd the new orthopædic clinic was opened. The 130 crippled children under 5 years of age known to the department comprise 54 crippled by poliomyelitis, 25 by congenital malformations, and 32 by rickets.

The proportion of houses in Cardiff occupied by members of more than one family is about 28 per cent. A sample of 3112 of such houses showed that in 402, or 13 per cent., there was mixing of the sexes over 13 years of age—a rather high age—in sleeping-rooms (exclusive of married couples). If the same proportion holds for all the 11,000 multiple tenant houses, the number sex-overcrowded amounts to 1420. Sex-overcrowding is, however, not confined to multiple tenanted houses, and it is estimated that in the city at present there are about 2000 sex-overcrowded houses.

There were 55 samples of milk examined for tubercle bacilli, and two gave a positive result.

Dr. Picken shows that the hospital accommodation of the city is inadequate. The voluntary hospital accommodation amounts to 483 beds, with prospect of immediate extension to 515, and ultimately to 615. This, however, includes 74 beds at the Seaman's Hospital and 34 at the Prince of Wales's Hospital, to a diminishing extent available for Cardiff cases. The guardians propose to erect a new hospital at Llandough with 408 beds, capable of extension to 952. Dr. Picken points out that the new hospital will, sooner or later, become a municipal hospital, that provision should be made for paying patients, that it should ultimately form an integral part of the medical school, and that a very large proportion of the patients will be of special types and cannot satisfactorily be treated in large blocks of wards of uniform pattern. He urges that the new hospital should be thoroughly up to date in every respect, and that a well-equipped laboratory should be provided at the outset.

REPORTS OF SCHOOL MEDICAL OFFICERS.

Name of town.	No. on roll.	Av. elem. school attendance.	No. of routine children examined.	No. of special examinations and re-inspections.	Percentage of children found on routine examination requiring treatment.†
Shrewsbury ..	—*	—*	1,267	7,543	8·0
Eastbourne ..	4,906	4,435	1,920	6,211	11·4
Stockport ..	15,757	13,465	4,888	11,236	23·24
Eccles	—*	—*	2,255	4,859	21·1

* Not given. † Excluding dental defects and uncleanliness.

Shrewsbury.

Dr. A. D. Symons, who took up his duties in September, 1925, reports that, so far as he has been able to judge, the health of the Shrewsbury children is satisfactory, as is certainly suggested by the small percentage of defects found during routine examination; but he has lost no time in pointing out the need for further effort. The inadequacy of the present nursing staff and of the present dental arrangements is clearly shown, as is the necessity for a definite scheme for treating tonsils and adenoids and for a class of mental defectives. He supplements oral advice given at medical inspections by the issue of leaflets written in clear and simple language, on the eradication of nits, the necessity for early treatment of squint, the prevention of dental caries, hygiene of the air passages, and food for growing children. Copies of these pamphlets are given in the report. The school clinic, which is open every morning except Saturday, has been reorganised, and has become a real centre for help, advice, and treatment. Many sound and practical suggestions contained in the report will soon be carried into execution—e.g., the provision of slippers in schools to prevent children getting chilled by wet and sodden boots.

Eastbourne.

Dr. W. E. Willoughby includes in his report a summary of the work done by the organiser of physical training; this shows a marked improvement in the condition of many malformations. There has been a big fall in the school population since 1912, owing to the low birth-rate in 1918–19—the largest decrease being in the infants departments. This decrease may make it possible to close certain schools where hygiene is defective. The facilities for treatment and for the care of abnormal children are good. There are clinics for ophthalmic, and throat, nose, and ear examinations, for dental treatment, and for inspection and treatment of malnutrition and tuberculosis. There is an open-air school and a special school for mental defectives, and although there is not yet an orthopædic centre, much good work is done at voluntary clinics for massage and electrotherapeutics. The secondary school-children showed a higher percentage of defects than the elementary school-children, while in the voluntary—e.g., continuation—schools the coöperation of the parents was much poorer. Dr. E. H. B. Coghill gives a short account of his treatment in a few bad stammerers.

Stockport.

The assistant school medical officer, Dr. W. H. Rowell, presents this report in place of the late Dr. A. G. Jenner. Reinspection in nearly half of the elementary schools was not carried out owing to illness among the staff. Many improvements have been made in the sanitary conditions. In some schools trough and privy closets have been replaced by separate flushing conveniences; in others lighting and ventilation have been improved, while playgrounds have been formed and tar-paved in four schools. Dual desks and tables are replacing antiquated furniture. The authority's schemes provide for treatment of minor ailments and dental defects; for refraction work with provision of spectacles; for the ascertainment of blind, deaf, defective, or epileptic children at the school clinic; for the operative treatment of tonsils and adenoids and aural conditions by arrangement with the Stockport Hospital; and for the care of orthopædic cases, through the special department of this hospital. X ray treatment for ringworm is given at the Skin Hospital, Manchester. Dr. Rowell states that 16 routine examinations are made hourly, but perhaps this rate is only temporary and necessary because of reduction in the staff. It is scarcely possible to examine children so fast and yet do justice to the doctor and the child, whilst such speed certainly does not impress parents.

Eccles.

Doubtless the increasing work of the school medical service will demand further medical assistance for Dr. J. E. Spence, who, with the part-time services of one dentist and an ophthalmologist, carries out the duties of medical officer of health and school medical officer at Eccles. There have been few changes during the past year apart from some improvement in the hygienic conditions of a few schools. The coördination of the school and public health services is emphasised; delicate children under school age are kept under supervision at the infant welfare centre, and are frequently visited in their homes by the nurses, careful records being kept in every case so that in time a full history of each child from birth onwards will be available; infants suffering from dental and visual defects can be treated at the school clinic. The number of dirty and verminous children shows a considerable increase over last year, partly because the standard of cleanliness has been raised, but also because of the lowered health and livelihood of parents. The recent provision of an ophthalmic clinic led to an increase in the number of visual defects receiving treatment, from 80 in 1923 to 304 in 1925—a striking proof of the need for such provision for the school population. No special schools exist apart from an excellent open-air school, which has benefited many children whose records are given in the report.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED DEC. 4TH, 1926.

Notifications.—The following cases of infectious disease were notified during the week: small-pox 316 (last week 313), scarlet fever 1786, diphtheria 1251, enteric fever 44, pneumonia 1021, puerperal fever 49, puerperal pyrexia 136, cerebro-spinal fever 7, acute poliomyelitis 41, acute polio-encephalitis 4, encephalitis lethargica 38, dysentery 4, ophthalmia neonatorum 99. There was no case of cholera, plague, or typhus fever notified during the week. The number of notifications of small-pox remains practically stationary, and the county incidence the same. The total of acute poliomyelitis and polio-encephalitis, taken together, namely, 45, shows a gratifying decrease. There is one notification only from Kent (Tonbridge). The three notifications from Surrey are attributed to Frimley, Wimbledon, and Woking. Rutland has again failed to report at all.

Deaths.—In the aggregate of great towns including London there was no death from small-pox, 3 (1) from enteric fever, 18 (0) from measles, 7 (2) from scarlet fever, 18 (4) from whooping-cough, 39 (16) from diphtheria, 58 (19) from diarrhœa and enteritis under two years, and 68 (14) from influenza. The figures in parentheses are those for London itself. It is noteworthy that London, which provides for hospital isolation of measles, has no death from that disease; during the previous eight weeks there were only three deaths from measles in London as compared with 70 in the 105 great towns excluding London. The M.A.B. hospitals at present contain on the average 25 cases of measles.

DONATIONS AND BEQUESTS.—Mr. Oscar Wilkinson, of Sunnyside, Scarborough, bequeathed £1000 each to the Scarborough Hospital and Dispensary, the Scarborough Cottage Hospital, the Scarborough Charity Organisation Society, the Scarborough Convalescent Home for Children, the Hull Royal Infirmary, the Sheffield Royal Infirmary, the National Lifeboat Institution, the Cancer Hospital, Brompton, St. John's Hospital for Diseases of the Skin, Leicester-square, London, and St. Dunstan's Hostel for the Blind.

Correspondence.

"Audi alteram partem."

SOCIAL CAPACITY IN DELINQUENCY.

To the Editor of THE LANCET.

SIR,—I have read with great interest the article by Dr. R. F. Jarrett in THE LANCET of Nov. 20th, but there are one or two points in the paper which seem to call for discussion. In the first place, the Porteus "maze" tests would hardly seem the best choice for determining the individual's apperceptive abilities. Their value lies in estimating powers of mental representation and planfulness in dealing with geometrical figures rather than with a concrete situation such as the individual is likely to meet with in ordinary daily life. To be sure, Porteus [1] himself claims considerably more than this for the test, but his statements have not been verified by other investigators. In my opinion, by far the most valuable test of this nature, and one which has a fairly high correlation with social apperceptions, is Healy's "Pictorial Completion II." [2] In this test, which is, I believe, too little known in England, the examinee is faced in pictorial form with ten concrete situations such as he is likely to meet with in everyday life, these situations varying from picture to picture instead of being, as in the Porteus "maze" tests, all the same type.

Even in this test (P.C. II.), though considerable work has been done in correlating the test results with the social efficiency of the individual, the best authorities make decidedly guarded statements. Bronner,[3] in a very thorough investigation of 1043 mentally normal individuals, of whom 729 were repeated offenders, states that "case studies show that in some instances defective apperceptions are directly related to delinquency, indeed, are, perhaps, the main cause," and that "it is worth while to study the apperceptive abilities of individuals because they represent a particularised ability that has prognostic value and important social implications." She adds, however, that "delinquents as a group, even repeated offenders, have apperceptive ability not differing from non-delinquents sufficiently to be significant." Perry,[4] in the study of 340 feebleminded individuals, concludes that "analysis of test results and social behavior in some of the irregular cases suggests that in the Healy 'pictorial completion II.' we may have a valuable tool for aid in discovering those of the feebleminded who have the mental traits most necessary for social adjustment." In view of these distinctly moderate statements, it seems that one should be very wary of accepting any test, or even a group of tests, as indicating the possible social reactions of the individual. It would be interesting to check Dr. Jarrett's results by an investigation of the after-career of the tested individuals and also to compare his findings with the results obtained from testing a group of non-delinquent individuals of similar age, educational opportunity, and social status. So far as I understand from the paper, neither of these investigations has been carried out.

Again, Dr. Jarrett quotes Burt as stating that "conduct and misconduct are always, in the last analysis, the outcome of mental life," and deduces from this that Burt considers the delinquent to be a person of peculiar "innate mental constitution." Surely no one who has read Burt's[5] careful and thorough work can fail to appreciate the very great stress which he lays on environmental conditions of every type. Were delinquency due to innate, and, therefore, irremediable causes, no treatment, whether in the form of punishment, detention, foster-home placing, or other mode of attack would be of any avail. In this connexion I should like to mention the recent and remarkable work of Healy and Bronner,[6] in which, in a thorough investigation and follow-up of the careers of 4000 delinquents, extending over a period of 14 years, the causes of delinquency and results of various methods of prevention and treatment have been assessed in an unusually scientific manner. On the basis of these investigations, they conclude that hereditary factors and so-called innate mental characteristics are of little value in prognosis and show but a very low correlation with the ultimate success or failure of their cases.

I agree with Dr. Jarrett that there is at present much loose and unscientific talk concerning the causation of delinquency, but is this an adequate reason for falling back upon the gloomy and fatalistic conception of innate and incurable defect? Recent researches have done much to disprove this doctrine and to show the very great value of constructive treatment suited to the requirements of the individual offender. What is urgently needed to-day is a scientific evaluation of *all* the factors concerned in making the delinquent what he is. This must be the first step in the development of a rational therapy which is already long overdue.—I am, Sir, yours faithfully,

R. EVELYN LUCAS,
Rockefeller Medical Fellow.

Boston, U.S.A., Dec. 1st, 1926.

[1] S. D. Porteus: Guide to Porteus Maze Test, 1924.
[2] W. Healy: Pictorial Completion Test II., Journal of Applied Psychology, September, 1921.
[3] A. F. Bronner: Apperceptive Abilities of Delinquents, Journal of Delinquency, vol. vii., No. 1, January, 1922.
[4] D. E. Perry: Interpretation of the Reactions of the Feebleminded on the Healy Pictorial Completion Test II.—Social Implications, Journal of Delinquency, vol. vii., No. 2, March, 1922.
[5] C. Burt: The Young Delinquent, 1925.
[6] Healy and Bronner: Delinquents and Criminals, their Making and Unmaking, The Macmillan Company, N.Y., 1926.

CYCLIC VOMITING.

To the Editor of THE LANCET.

SIR,—My experience of cyclic vomiting in childhood corresponds essentially with that of Dr. Cameron, but I would also direct attention again to the remarkable cases I published in THE LANCET (1924, i., 1045) of volvulus of the small intestine in which the diagnosis of cyclic vomiting had been made. I am inclined to think that there is something more to be learnt about the influence of abnormal mobility of the intestines as a factor in some of these cases of cyclic vomiting than is commonly supposed. Although the bearing of such curious and exceptional cases on the subject is obscure, the American observations commented upon in your annotation interested me as an independent contribution to the problem. One other point of interest is that I have had under my care several cases of cyclic vomiting who in earlier life had suffered from cœliac disease.

I am, Sir, yours faithfully,

F. JOHN POYNTON.

Devonshire-place, W., Dec. 11th, 1926.

THE DISSOLUTION OF INSULIN.

To the Editor of THE LANCET.

SIR,—Dr. Funk's reputation as a biochemist renders a careful consideration of any statements he may make necessary, but I agree with Dr. Lawrence that the letter published in your issue of Nov. 27th is not as clear as could be wished. Dr. Funk's second letter states his position more definitely, but does not furnish sufficient detail for a critical examination of his claims, and until this is available useful criticism is not possible.

The hyperglycæmic effect of ordinary insulin in rabbits, referred to by Dr. Lawrence, appears to have been first described by Zondek and Ucko in 1925.[1] Early this year a similar effect in several cases of diabetes was reported by H. J. John.[2] I have met with a few diabetics in whom the first effect of injected insulin has been to cause a rise in the blood-sugar, and experiments Mr. Howard and I have carried out with rabbits and guinea-pigs have shown that in certain animals an initial hyperglycæmia can be regularly induced under suitable conditions. The

[1] Klin. Wchschr., 1925, iv., 6.
[2] Jour. Lab. and Clin. Med., 1926, xi., 6.

most important factors appear to be the level of the fasting blood-sugar and the dose of insulin employed, a small dose of insulin giving rise to a more pronounced initial hyperglycæmia in healthy animals with a high fasting blood-sugar, of 120 mg. or more, than in those with a low fasting value, of 80 mg. or less; when the dose of insulin is increased the hyperglycæmia becomes less pronounced and more evanescent, so that eventually it either fails to develop, or is too quickly obliterated to be detected, this effect being more readily induced in low than in high blood-sugar animals, as we showed in a paper read before the Royal Society of Medicine this summer.[3]

As long as the exact nature of the causes determining the normal level of the blood-sugar are not decided, the interpretation of such results, and findings like those described by Drs. Funk and Lawrence, must remain largely a matter for conjecture. In the paper referred to we suggested that the occurrence of unusual fasting blood-sugar levels in apparently healthy animals and the paradoxical influence of insulin on the blood-sugar of some, might be dependent upon differences in the balance between the activities of the ductless glands regulating carbohydrate metabolism, the delayed fall and occasional initial rise following an injection being partly due to the neutralising effect known to be exerted by pituitrin upon the hypoglycæmic action of insulin.

I am, Sir, yours faithfully,
P. J. CAMMIDGE.

Nottingham-place, Marylebone, W., Dec. 4th, 1926.

AFTER-EFFECTS OF POISON GAS.

To the Editor of THE LANCET.

SIR,—The contribution to this subject made by Dr. Nelson in your issue of Dec. 11th is of interest and value to others than those who are chiefly concerned with conditions that are the aftermath of the Great War, since the after-effects of poison gas in war have some counterpart in conditions arising in industrial life. For those who are constantly seeing men who were gassed during the war Dr. Nelson's paper is particularly interesting, since the pathological findings in his case fit in so well with the clinical picture these men so often present. Anyone particularly interested in this subject will find an excellent *exposé* of it in an address by Dr. Émile Sergent delivered at Val-de-Grâce in January, 1925, which is included in his "Études Cliniques sur la Tuberculose et les Maladies de l'Appareil Respiratoire," second edition, published by Maloine, Paris, 1926. It is interesting to find that the views of Dr. Nelson and of Profs. Sergent and Achard as to the effects of *les gaz chlorés* are practically identical.

I am, Sir, yours faithfully,
Manchester, Dec. 11th, 1926. JOHN H. P. GRAHAM.

Obituary.

HENRY STOKER, F.R.C.S.I., D.P.H.

NEWS has reached this country of the death of Colonel Henry Stoker, at the Royal Military College, Duntroon, Australia. He came of an old professional family and both his father and grandfather (1773–1845) were prominent in medical practice, his father being Dr. E. A. Stoker, of Dublin. The fourth of seven brothers, all but one of whom took up medicine, Henry Stoker was educated at Bective College and Trinity College, Dublin, and qualified in 1884. Like his father and three of his brothers, he became a Fellow of the Royal College of Surgeons in Ireland. Interested in all forms of outdoor sport he will be remembered by contemporaries as a prominent member of the Wanderers Rugby Football Club, playing with his brothers, two of whom reached international standing; he himself just missed this distinction, being selected for the reserves. Dr. Stoker early decided to make his home in Australia and after taking special courses of study at continental centres was appointed sanitary officer to the port of Melbourne. During his time of office he did good pioneer work in connexion with fly-borne diseases, but his interest in surgery soon led him to give up his official appointment. Moving to Wagga Wagga he developed a large practice, and became recognised as one of the leading surgeons in New South Wales. On the outbreak of the late war he joined the Australian Army Medical Corps, and when the war was over the Federal Government marked its appreciation of his services by appointing him to the Royal Military College, Duntroon, where he remained until his death.

Colonel Stoker's wife, a daughter of the late Mr. James Poe, of Kilkenny, was killed in a carriage accident a year ago. He leaves two sons.

EDMUND JOHN ERSKINE RISK, M.R.C.S. ENG.

Colonel E. J. Risk, who died in London on Dec. 7th at the age of 68, was a son of the late Rev. John Erskine Risk. As a student at St. Bartholomew's Hospital he distinguished himself both in scholarship and athletics. He qualified M.R.C.S. Eng., L.R.C.P. & L.M. Edin. in 1880, and in the following year entered the Army Medical Service, proceeding to Malta. He served in the Egyptian campaign and was present at the battle of Tel-el-Kebir. After living for some time in India he was, in 1891, invalided home suffering from dysentery and malaria. After 12 months' sick leave he was posted to the Aldershot Command, and three years later went to the West Indies, where he served nearly six years at Barbados and St. Lucia. In 1901 he was on the embarkation staff at Southampton, and in December of that year sailed for South Africa on the hospital ship *Simla*, of which he took medical charge at Lorenzo Marques for three months. Next he proceeded to Elandsfontein, where he had charge of the surgical division, and after a further period of service at home and in Ireland he returned to South Africa, and was appointed senior medical officer at Bultfontein, Orange River Colony, a post which he held until 1910. Appointment to the Irish Northern Command followed, and in 1911 he became Commandant and Director of Studies at the Royal Army Medical College, Milbank. Unfortunately his health failed, and he had to retire in 1913.

Colonel Risk leaves a widow and one daughter.

LONDON STREET ACCIDENTS.—The London County Council has decided to ask the Ministry of Transport to call a conference to consider street accidents in London. In the three months, July–September, there were 269 fatal accidents, a large increase over former figures. In the same period 26,727 persons were injured in the streets, an average of 293 per day.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH.—On Nov. 23rd Prof. Adam Patrick read a paper on Diabetic Coma. After referring to the facts known about the chemistry of ketosis, he showed how imperfect carbohydrate utilisation may be the result either of deprivation of sugar or inability to assimilate it. He emphasised the importance of aceto-acetic acid in the body and pointed out that there was no object in elaborating tests to distinguish this substance from acetone in the urine. Dealing with the symptomatology of coma, Prof. Patrick laid stress on the early signs, especially abdominal pain. He advised treating every symptom which appeared out of the ordinary as the possible commencement of coma. Contrasting the symptoms of coma with those of hypoglycæmia, he showed how in the latter the prominent symptoms are nervousness, mental excitement, tachycardia, and perhaps diplopia. Dealing next with treatment, he referred to the importance of making every effort to prevent the occurrence of coma by attention to the diet laid down, and especially by avoidance of any change which will cause difficulty in accurately adhering to the ordered regimen. In conclusion, he gave a detailed account of methods of treatment of coma once established, up to 200 units of insulin being given in the 24 hours with control by two-hourly examination of specimens of urine. He mentioned the utility of the duodenal tube in facilitating the introduction of large quantities of fluid, as recommended by Poulton.

[3] Proc. Roy. Soc Med., Sect. of Med., 1926, xix., 37.

THE SOCIETY OF APOTHECARIES.

PRESENTATION TO PROF. W. E. DIXON.

THE Master and Wardens of the Society of Apothecaries of London gave a dinner on Tuesday last, Dec. 14th, at their Hall, the occasion being the presentation to Prof. W. E. Dixon of the Society's Gold Medal for Therapeutics. The presentation was made by the Master, Dr. Alfred Hepburn, who outlined the development of the medical profession since the times when it was divided into the physicians who possessed university degrees and very generally extended their knowledge by continental travel; the apothecaries who possessed a definite status in therapeutics; and the surgeons, whose Company was allied to the Company of Barbers, and who were mainly engaged in blood-letting. He sketched the rise of the Royal College of Physicians of London from the days when election to that body was in the hands of the Bishop of London, the Dean of St. Paul's, and four medical Censors; and, admitting that there had been times when the College and the Society of Apothecaries were at variance, pointed out that harmony now prevailed in the common desire to promote therapeutics. In this connexion he gave reasons for finding Prof. Dixon a highly fitting recipient of the Society's Gold Medal.

Prof. Dixon, in acknowledging a deep sense of the compliment, pointed out that the trend of modern thought was showing the human body itself to be an apothecary's shop, doling out remedies as required from its own physiological resources, which were thus shown to be distinctly therapeutic. In the matter of surgery, he alluded to the vast opportunities for surgical progress that were opened up by the chemical and pharmacological work which resulted in the discovery of anæsthetics.

Dr. R. W. Statham, the Senior Warden, proposed the toasts of the Royal Colleges which he coupled with the names of Sir John Rose Bradford and Sir D'Arcy Power. Sir John Rose Bradford, while agreeing with the emphasis that had been laid by previous speakers on the essential value of treatment, pleaded that there was still room for the physician, inasmuch as it was generally admitted that diagnosis should come first, while diagnosis was largely dependent upon a knowledge of pathology. Sir D'Arcy Power, in a learned excursion into the history of medicine, pointed out that the apothecaries had developed from a Guild of Pepperers, and had early secured freedom, while the independent Company of Surgeons fell into bondage to the Barbers, emergence from which meant bankruptcy at the time the separation was made.

The toast of The Guests was proposed by the Junior Warden, Lieut.-Colonel C. T. Samman, and was replied to by Mr. Arthur Denman, who interested the company with a narration of his medical ancestry. His great-grandfather, he said, was Thomas Denman, the famous accoucheur at the close of the eighteenth century, whose three children were—one son, who became Lord Chief Justice of England, and two daughters, of whom one married Dr. Matthew Baillie, the pioneer in clinical pathology, who presented "the gold-headed cane" to the College of Physicians, and the other married Sir Richard Croft, the well-known obstetrician, who had the misfortune to attend the Princess Charlotte, the only daughter of George IV., in her fatal confinement. Through his great-grandmother, he said, Sir Benjamin Brodie and Prof. Brodie also came into the pedigree.

The speeches were interspersed with a programme of music provided by Miss Olive Kavann and Mr. Percy Kahn.

GUY'S HOSPITAL.—The Matron, Miss Margaret Hogg, C.B.E., is to retire from the service of the hospital on March 27th, and Miss Emily MacManus, Matron of the Bristol Royal Infirmary, has been appointed to take her place.

The Services.

ROYAL NAVAL VOLUNTEER RESERVE.

Prob. Surg. Sub-Lt. T. A. Brand is confirmed in his rank.

ROYAL ARMY MEDICAL CORPS.

Capts. to be Majs.: E. L. F. Nash, M. Morris, W. E. Adam, R. H. Lucas, M. P. Power, G. B. Hadden (Prov.), and F. J. Hallinan.

Temp. Capts. to be Temp. Majs.: W. Duguid, H. L. Mann, J. Boyd, J. L. Dimond, H. Davies-Colley, St. G. E. Harris, E. K. Campbell, F. C. Doble, and W. B. Swete-Evans.

ARMY RESERVE OF OFFICERS.

Lt.-Col. H. G. P. Stallard having attained the age limit of liability to recall, ceases to belong to the Res. of Off.

ARMY DENTAL CORPS.

Capt. S. J. F. Webb, late Dental Surg., Gen. List, to be Capt.

TERRITORIAL ARMY.

Lt.-Col. L. D. Bailey to be Bt. Col.

Capt. G. P. Crowden (late K.O.Y.L.I.) to be Lt. super. for service with the Medical Unit of the London University O.T.C., and relinquishes the rank of Capt.

Capt. R. I. Dacre to be Maj.

Lt. W. B. McCall to be Capt.

ROYAL AIR FORCE.

R. A. W. Kerr and E. Thompson are granted short service commissions as Flying Officers for three years on the active list.

G. E. Church is granted a short service commission as a Flying Officer for three years on the active list, and is seconded for duty with the Royal Albert Edward Infirmary and Dispensary, Wigan.

Flying Officer B. W. Cross is promoted to the rank of Flight Lt.

INDIAN MEDICAL SERVICE.

The King has approved the retirement of Lt.-Col. E. F. G. Tucker.

Capts. R. Hay, M. Murphy, Jehangir Hormusji Oonvala, H. E. Murray, and W. H. Will to be Majs.

The King has approved the grant of a temporary commission to Tharuvi-parambil Reghunatha Pai Rama Pai.

The King has approved the relinquishment of their temporary commissions by Capts. Shivax Ardeshir Paymaster (permitted to retain the rank of Capt.), Showkiram Sahijram Malkani (permitted to retain the rank of Capt.), and Jehangir Cursetji Bharucha.

Dr. Ganga Charan Garg, Provincial Medical Service, medical officer, District Jail, Lucknow, to be Medical Officer in immediate charge of the Sadr Dispensary, Rai Bareilly. Dr. Bhagwati Prasad Mital, medical officer of health on special duty plague research work, to revert as Medical Officer of Health, II. Class. Lt.-Col. C. C. Cumming to be officiating A.D.M.S. Allahabad Independent Brigade Area. Capt. H. R. Cursetji to be Specialist in Ophthalmology, Rawalpindi District. Capt. R. McRobert to be Officiating Specialist in Surgery, Burma District. Capt. P. M. Antia to be Deputy Assistant Director of Pathology, Bombay District, and Capt. A. Y. Dabholkar to be Officer-in-Charge, Brigade Laboratory, Bareilly. Lt.-Col. W. L. Harnett, superintendent, Campbell Medical School and Hospital, is nominated to be a member of the Bengal Council of Medical Registration, vice Lt.-Col. M. Mackelvie. Dr. E. Muir, pathologist and research worker in the School of Tropical Medicine, Calcutta, to be a Member of the Governing Body of the State Medical Faculty for a period of two years, vice Maj. Hasan Suhradardy. Dr. Kedarnath Das to the Bengal Council of Medical Registration, in place of Dr. Pramatha Nath Nandi.

HEALTH CENTRE IN NEW YORK.—On Nov. 28th a health demonstration centre was opened in East 38th Street. The building in which it is housed has been altered and equipped by the Milbank Memorial Fund, and contains model clinic and consultation rooms, a rest room, a large roof for patients, and a lobby where information about health is freely given. The centre is in one of the most congested parts of New York. An account of the work of the Milbank Trust appeared in THE LANCET of Nov. 13th (p. 1023).

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

THE CORONERS (AMENDMENT) BILL.

THE Coroners (Amendment) Bill was considered by Standing Committee D of the House of Commons on Tuesday, Dec. 7th. Mr. MORGAN JONES was in the chair.

On Clause 1 (which deals with the qualifications and disqualifications of persons for appointment to the office of coroner),

Mr. RHYS DAVIES moved an amendment to provide that a dual qualification, legal and medical, should be required for appointment as coroner. He said that he understood that the dual qualification had appertained in London for some years, and he did not believe that there had been any difficulty in filling the posts in consequence. He thought that what was good enough for London ought to be good enough for large centres like Manchester, Leeds, Glasgow, and Liverpool.

Captain HACKING (Under Secretary for the Home Department) said that the number of coroners in London was small compared with the number of coroners throughout the country. There were about 300 coroners throughout the country, and it would restrict the choice very much if they insisted upon a dual qualification.

The amendment was negatived.

On Clause 5 (salaries of county and borough coroners),

Captain HACKING moved a new subsection (4) as follows: "The salary payable under this section of a borough coroner shall be instead of the fees and allowances specified in the Fourth Schedule to the Municipal Corporations Act, 1882, and the additional payment mentioned in Subsection (2) of Section 27 of the Coroners Act, 1887, or the remuneration payable under any Act, or Provisional Order confirmed by an Act, as the case may be, and no such fees, allowances, additional payment, or remuneration as aforesaid shall be payable to a borough coroner after the commencement of this Act."

The amendment was agreed to.

Captain HACKING moved to insert at the end of Subsection 5 the words: "The salary of a borough coroner shall in default of agreement between him and the council by whom his salary is payable be at a rate fixed by the Secretary of State."

The amendment was agreed to.

On Clause 11 (appointment of assistant deputy coroner),

Mr. GATES moved an amendment to include franchise coroners.

Captain HACKING, in resisting the amendment, said that under the Bill franchise coroners would cease to exist. The existing power of a county or borough coroner to appoint a deputy rested upon Statute, but it was not so with franchise coroners. Any power that they had to appoint a deputy rested upon prescription and custom. There was no object in bringing franchise coroners within the provisions of the Bill.

Mr. GATES said it was true that franchise coroners were destined to perish ultimately, but as long as they existed they should have the power to carry on their courts. If the coroner was ill and his deputy was ill, there was nobody to carry on the work, and inquests might be delayed.

Captain HACKING said that there had never been any difficulty to his knowledge, and no fear need be entertained that inquests would be delayed.

The amendment was negatived.

On Clause 14 (view of the body and burial order),

Captain HACKING moved to leave out Subsection (2) and to insert a new subsection as follows:—

"Subject to the provision of any rules made under this Act an order of a coroner authorising the burial of a body upon which he has decided to hold an inquest may be issued at any time after he has viewed the body."

He explained that the subsection in the Bill was a re-enactment of a provision in the Coroners Act, 1887, with certain modifications. The Births and Deaths Registration Bill, which was at present going through Parliament, affected this matter, and until that Bill was placed on the Statute Book it was impossible to know exactly what it would contain. This clause, however, must work in connexion with that Bill, and it was thought more desirable that the Lord Chancellor should have the opportunity of issuing Regulations and Rules rather than lay down something in the Bill which might prove unworkable.

The amendment was agreed to.

On Clause 17 (inquests where several deaths arise from one accident),

Mr. LEE moved an amendment to provide that the coroner in the district in which the accident occurred should conduct the inquiry.

Captain HACKING said there were many cases where it was advantageous that the inquest should not necessarily be held at the place where the accident happened. Several people might be badly injured in a colliery accident, and might be taken to the nearest town where there was a hospital, and if they died there it would not be advisable to remove the bodies to another district in order to hold the inquest. It might be for the convenience of everyone that the inquest should be held at the place where the bodies were.

The amendment was negatived.

On Clause 21 (post-mortem examination without inquest),

Major-General Sir R. LUCE moved to leave out the words in Subsection (1): "post-mortem examination may prove an inquest to be unnecessary," and to insert instead the words:—

"An inquest may be rendered unnecessary by a report to him from a duly qualified medical practitioner recently in attendance on the deceased, he may direct such a medical practitioner to furnish a report, or if he is of opinion that an inquest may be rendered unnecessary by a post-mortem examination."

He said that the object of the amendment was to reduce the number of unnecessary inquests. The clause as it stood allowed a coroner to order a post-mortem in certain cases, and on the result of that examination to decide whether he should hold an inquest or not. The amendment would provide that in cases where a post-mortem was not necessary the coroner should have the power to call for a report from the doctor who had been attending the patient before death, and as a result an inquest might be unnecessary. This was not a new principle. A considerable amount of evidence was brought before the Departmental Committee in 1909, and the principle already existed in Scotland. The principle was also in operation in a particular coronership in Durham, and though it had been in practice for 30 years, it had never been challenged in the Law Courts. The coroner of Durham stated that by this method he had been able to reduce the number of inquests by 50 per cent. From his own personal experience he (Sir R. Luce) could say that a large proportion of inquests had been unnecessary and could easily have been dispensed with.

Mr. RHYS DAVIES said he was quite in favour of the proposal to reduce the number of unnecessary inquests, but were they not, if they passed this amendment, practically transferring the work of the coroner to the medical practitioner? He agreed that the certificate of the medical practitioner would be very important in most cases, but there were cases in which medical practitioners themselves were involved in certain practices which were undesirable.

Lieut.-Colonel FREMANTLE said that the amendment would regularise a practice which had existed to a certain extent. He received a letter on the previous day from a medical practitioner of great experience in a typical area covering the whole county. He wrote:—

"We frequently view the body, and if everything appears to warrant the view that death was due to natural causes, especially if the doctor has previous knowledge of the deceased, we give a written report to the coroner stating our opinion as to the cause of death. This suffices, does away with the expenses of an inquest, and the doctor gets no fee for his trouble."

The amendment would put this on a regular footing, and enable the coroner to demand such a report.

Captain HACKING said this was a very interesting subject, and there was a great deal to be said for the arguments put forward in support of the amendment. Mr. Rhys Davies had said that this would mean that the medical practitioner would be responsible for the inquest, but that was not the case. The coroner must accept full responsibility; he merely got advice from the medical officer. But the question of cost entered into the matter. This amendment, with the two consequential amendments, provided that the doctor should be paid half a guinea for his report. If this meant a necessary report in writing, it was at present open to the local authority to provide for any reasonable and necessary expenditure involved. As a matter of fact the Durham County Council, under the Schedule of Disbursements of the 1887 Act, allowed a fee of 10*s.* 6*d.* for a report. There appeared to be no reason to suppose that that was illegal, and he suggested that the medical profession, instead of asking for legislation on a matter of this kind, should move to get other local authorities who did not have this power to provide in schedules for such a fee, and if the doctors were successful in that way, as he had no doubt they would be, then the backward authorities could be brought into line by approaching the Secretary of State under Clause 29 (Subsection (2) (*b*)) to prescribe an appropriate fee for this work.

After further discussion,

Sir R. LUCE said the class of case dealt with here had developed from custom. A patient had been under a doctor for a considerable time. Perhaps he was not acutely ill, and he was not seen by the doctor for a few weeks. He might be known to be suffering from heart disease. The patient died suddenly without having seen the doctor for a few weeks or a month or two. It was extremely common for the coroner to refuse to accept an ordinary death certificate from the doctor, and an inquest was held. The doctor,

however, knew all about the patient, and could perfectly well give the coroner full information if he was properly asked to do so in writing, and in that way he could entirely avoid the necessity for an inquest.

The amendment was negatived by 21 votes to 7.

On Clause 22 (power of coroner to request specially qualified persons to make post-mortem and special examinations),

Mr. LEE moved an amendment requiring a coroner to give notice of his intention to hold a post-mortem or special examination to the trade-union representative of the deceased, and providing that such trade-union should have the right to be represented by a medical practitioner at the examination. He said that rightly or wrongly there was a prevailing idea among the families of men who died as the result of accidents that the medical man appointed by the coroner was in some way hostile to their interests, and he moved this amendment in order to secure the fullest opportunity for the family to know that complete justice had been done to their case.

Lieut.-Colonel FREMANTLE said he was in sympathy with the ostensible object of this proposal. The medical profession were only too glad to have any other medical evidence brought in to reassure suspicious minds among the lay public that the medical men had done their best and had been accurate. He thought the family ought to be represented, but he did not understand why a special privilege should be given to the trade-union representative. The matter should be left to the family, and they could, if they so desired, notify a trade-union representative under the ordinary law.

Sir R. LUCE said that although he had great sympathy with the principle of the amendment, there were considerable difficulties in the matter. In cases where the interests of the trade-union and those of the employers clashed, that would introduce the difficulty of having to consider also the rights of the employer. Most of these places were not very suitable for having a crowd to watch the post-mortem.

Captain HACKING said that he thought that it was wrong that this onus should be placed on the coroner. If the relatives cared to be represented or desired to leave the matter in the hands of the trade-union, in all likelihood the coroner would not object. There appeared to be no necessity for putting this into the Bill and making it a hard-and-fast rule. The Home Secretary had powers through the Lord Chancellor to make rules in connexion with a matter of this kind, but in all probability it would not be necessary to take action. There were occasions when a post-mortem must be carried out immediately, and it might be a very serious thing to take away the right of a coroner to order a post-mortem immediately in the interests of justice.

The amendment was negatived by 16 votes to 10.

Mr. LEE moved a further amendment to empower a trade-union in a case where the question of workmen's compensation was likely to arise, to call the medical practitioner who had attended the post-mortem or special examination on their behalf at the inquest, and ask him questions, and he should have a right to answer such questions and give evidence on any matters arising out of the examination.

Captain HACKING said that if a doctor had actually attended the post-mortem and the coroner knew he was in court, surely it would be a most extraordinary thing if he was not called to give evidence. If a coroner did not carry out his duties in such an obvious respect, the Home Secretary would certainly have something to say on the matter, and would cause an inquiry to be made.

The amendment was negatived by 16 votes to 10.

The Bill was further considered in Standing Committee on Wednesday, Dec. 8th. Mr. MORGAN JONES was in the chair.

On the further consideration of Clause 22,

Mr. SMITHERS moved an amendment that in cases where the coroner was informed by some person that in his belief the death of the deceased was caused partly or entirely by the improper or negligent treatment of a medical practitioner, or other person, that information need not be given on oath, but that the coroner could take action to prevent such medical practitioner or other person performing or assisting at any post-mortem or special examination made for the purposes of the inquest on information received.

Captain HACKING said that if it were placed at the discretion of a coroner to say that a certain doctor should be prohibited from performing a post-mortem, it would be casting a very obvious slur on certain members of the medical profession, probably without any cause and before even an inquiry had been made. The Bill as drafted afforded a much better mode of procedure.

The amendment was withdrawn.

Sir R. LUCE moved an amendment providing that a medical practitioner or other person should have the right, if he so desired, to be present or be represented at a post-mortem or special examination in a case where it was alleged that the death of the deceased was caused by the improper or negligent treatment of such medical practitioner or other person. The object of the amendment, he said, was to strengthen the position of the medical practitioner in these cases, especially if it was possible that a person might make an accusation on oath in the court after the proceedings had begun. He had known of no cases in which a coroner had refused to allow a medical man to be represented, but in view of the very definite ruling in the Act as it stood that the medical man should not direct or assist in the post-mortem examination, it seemed right that he should have his position guarded in the way he had suggested. He realised that this provision was put into the old Act because it was possible that a medical man who was quite unscrupulous might spoil the post-mortem examination. In fact, he believed it was put in on account of a very definite case in which a medical man was suspected of murder by poison. He actually jogged the elbow of the man who was performing the post-mortem examination and upset the contents of the stomach so that they could not be examined afterwards. One realised that a medical man in such circumstances should have no direct part in the post-mortem examination, but since he was debarred from that, it seemed right that he and other people concerned should have the right to be represented at the post-mortem examination.

Mr. RHYS DAVIES supported the amendment.

Captain HACKING suggested that Sir R. Luce should withdraw his amendment, and that they should adopt a form of words providing that "such medical practitioner or other person shall have the right, if he so desires, to be represented at any such post-mortem examination." He thought they might cut out the special examination.

Sir R. LUCE said he thought he could agree to that proposal. He agreed that it was impossible to have representation on all occasions at special examinations which might last for days or weeks. He thought that the post-mortem would cover the ground.

Lieut.-Colonel FREMANTLE said he thought that the legal justice of the case applied as much to the special as to the post-mortem examination. There was also the possibility that the accusation might be false, and the practitioner, by being present, might help to elucidate the facts in the interests of right and justice.

Captain HACKING said that he thought that he had met the Committee very fairly in offering this concession. He thought that they might leave the question of the special examination to the discretion of the coroner.

After further discussion Sir R. LUCE withdrew his amendment, and the form of words suggested by Captain HACKING was agreed to.

On Clause 23 (fees to medical witnesses),

Sir R. LUCE moved an amendment to secure that the medical practitioners should be paid for each day's attendance to give evidence. At the present time, he said, the rule was that, however many days or however many times the court might adjourn, the doctor could only be paid a fee for one day, although he might have to attend the court two or three times. That procedure existed in no other court in the country, and he thought it ought to be abolished.

Captain HACKING said in substance he was quite prepared to accept this amendment, but if the hon. and gallant Member would withdraw it, he would move another form of words to provide that medical witnesses should receive one and a half guineas for each day on which they were required to attend.

Sir R. LUCE accepted Captain Hacking's offer.

Captain HACKING then moved the substituted form of words which he had suggested.

After some discussion, Captain HACKING'S amendment was agreed to by 18 votes to 2.

Captain HACKING moved an amendment to provide that the fee for a post-mortem examination should be two guineas, instead of one and a half guineas as provided in the Bill.

Mr. RHYS DAVIES said he wanted to know how it came about that Captain Hacking had succumbed so early to his hon. friends in connexion with these fees. What was fair for the doctors in the opinion of the Home Office when the Bill was drafted must be fair now. At the same time, he wished the Bill to pass.

Sir R. LUCE moved that the fee should be three guineas. He said that the Committee would realise that a post-mortem was not a pleasant job. It was a job of great importance and of considerable danger to the medical practitioner. Compared with other operations of the same kind requiring considerable skill it had hitherto been paid for disgracefully, and he was glad that the Home Office had agreed to some increase. But he did not think that the increase from one to two guineas was sufficient for the severe work that had to be done at a post-mortem.

The amendment to increase the fee to two guineas was agreed to.

Sir R. LUCE moved an amendment to provide that medical practitioners who made a post-mortem examination of the body of a deceased person (including a report, if any, of the result thereof to the coroner), and attended to give evidence at an inquest on the body, should receive four guineas for the first day of attendance and one and a half guineas for each subsequent day, instead of two guineas, as stated in the Bill. He said he understood that the Under Secretary was prepared to agree to three guineas in this case, and he thought they had better accept that proposal.

Sir R. LUCE withdrew his amendment, and Captain HACKING moved an amendment giving three guineas and one and a half guineas respectively.

Mr. RHYS DAVIES said he entered his protest against the way in which this clause had been amended. They were not opposed to proper payment to doctors, but he did not like the way in which this had been done. He was not so sure that had the medical practitioners been on the Labour side and not on the Conservative side the Under Secretary would have acceded so readily to their claims.

Captain HACKING pointed out that there were doctors who were members of political parties other than the Conservative party, and these fees were to be given to doctors generally. The Home Office considered that the present fees were too small for the work that was performed.

Captain HACKING's amendment fixing the fees at three guineas for the first day and one and a half guineas for each subsequent day was agreed to by 14 votes to 6.

The Committee stage was concluded, and the Bill was ordered to be reported to the House.

Mental Deficiency Bill Dropped.

The Government have found it impossible, owing to the pressure of Parliamentary business at the end of the session, to make further progress with the Mental Deficiency Bill, and the measure has accordingly been dropped for this year.

HOUSE OF LORDS.

WEDNESDAY, DEC. 8TH.

MILK AND DAIRIES ORDER.

Lord STRACHIE moved: "That an humble address be presented to His Majesty praying that the Milk and Dairies Order, 1926, dated 6th July, 1926, be annulled." He said that he was not objecting to the Order *en bloc*, quite the contrary. He thought that many of the 33 articles were most excellent, necessary, and desirable. He was taking serious objection only to three. They would all agree as to the necessity for the utmost cleanliness to be observed by the milkers, that the cows should be kept clean and their udders free from dirt before they were milked, and also that the milk churns should be thoroughly and properly cleansed before use after being sent back. The American view was that 80 per cent. of the impurities in milk could be attributed to the handling of the milk. But what he objected to was the enormous expense which was put on owners large and small by certain provisions of this Order. He could not understand why Articles 27 and 29 of the Order, which provided for the keeping of milk churns and receptacles in proper order, should not come into force for one year and nine months. He could not help thinking that in this case the manufacturers had had a great deal more influence with the Ministry of Health than the agriculturists had. Surely it was most important that these churns should have a proper lid and that nothing of a contaminating nature should enter into them during transport. Article 8 provided that every county council and county borough should cause to be made such inspection of cattle as might be necessary and proper for the purposes of the Act and the Order. Why should it be necessary, Lord Strachie asked, for every county council and county borough to make an inspection of the whole of the cattle in their area? He thought that the onus should remain as it was now, on the owners of the cattle, to report to the local authority if and when they knew that any of their cattle were diseased. If the owners did not report any disease in their herd, then by all means let them be prosecuted. The noble lord also objected to Articles 12, 13, and 25 of the Order on the ground that they prescribed structural conditions in connexion with dairies and cowsheds which, he said, would impose enormous expense on owners and owner-occupiers of dairy farms. This was not a time when such expenditure could be afforded. He noted that Mr. Chamberlain had promised to send out a Circular to local authorities emphasising the need of the reasonable administration of the Order, having regard to the difficulties attaching to milk production, but even if such a Circular were sent out, there was no certainty that the local authorities would pay attention to it.

After some discussion,

Lord BLEDISLOE (Parliamentary Secretary to the Ministry of Agriculture) said that with some little knowledge of the conditions prevailing in most other civilised countries, he asserted that such a debate could not have taken place in a legislative chamber in any other civilised country of the world. In these matters most civilised countries were unfortunately very far ahead of us, because they had paid greater attention to the fact that the health of the community was undoubtedly affected injuriously by the consumption or ingestion of polluted milk, and had taken more drastic action in consequence. The consumption per capita of milk in this country was disgracefully small—in fact, smaller, as far as they knew, than in any other highly civilised country in the world; and all health authorities, as far as he knew, were prepared to admit that the health of the nation, and particularly of its children, was suffering in consequence of the inadequate consumption of milk. Noble lords might say that that did not affect the question under discussion, but he thought it affected it very materially, because if there was an opinion abroad—as there had been an opinion abroad, which had been exaggerated by enthusiasts and extremists in this matter—that there was what was sometimes called "poison in the milk pail," it acted as a serious deterrent to the consumption of milk among the poorer population, who sought to find some alternative, when there was no alternative, so far as the infantile population was concerned, to milk as a food. They were told on the best authority that the reason why farmers had not been able to make a sufficiently good milk contract was that there existed a surplus of milk at the present time in this country; or, in other words, there was an insufficient demand on the part of the population generally for the available supply. Was it not fair to assume that to some extent this was due to the fact that the milk supply was not all that the most enlightened people would like to see it in this country? Medical officers of health in certain cities to his knowledge had given public advice against the consumption of liquid milk by infants in their administrative areas, and had gone so far as to advocate in preference the consumption of milk powder or dried milk coming from foreign countries. That was not good for the dairy farmer or the dairying industry, and if they made some reasonable concession to enlightened public opinion on medical grounds it was more than possible that the demand for milk would increase and the dairy farmer in consequence would be more prosperous. The Ministry of Agriculture held the view to-day, based upon the reasons which he had submitted to their lordships, that it was not in the best interests of the farmers themselves to stand in the way of reasonable improvement of the methods of milking cattle and handling milk. For that reason they had been in quite amicable conference with the Ministry of Health in arriving at the final form of this Milk and Dairies Order.

On a division the motion to annul the Order was defeated by 63 votes to 21.

EXPERIMENTS ON STOLEN DOGS.

Lord BANBURY asked the Government whether their attention had been drawn to the case at Clerkenwell Police-court on Dec. 1st, where a man was charged with stealing a dog which he had sold to the University College School of Physiology; whether they were aware that a man was convicted at Bow-street on Nov. 20th for receiving two stolen dogs which he was taking to the University College School, and what steps they intended to take to stop this practice. The noble lord quoted an explanation issued by the College authorities after certain remarks had been made by Mr. Fry, the magistrate in the Bow-street case. In the course of the explanation it was stated that the professor of physiology had always taken special precautions to prevent the delivery of stolen dogs in that he required a written guarantee that all the animals so delivered by the man Hewett (who had been convicted at Bow-street of feloniously receiving two Irish terriers valued at £7 and of cruelly ill-treating the dogs) and the other dealer with whom the professor traded were legitimately obtained. Commenting on this, Lord Banbury said that no one, unless he was of opinion that in all probability the article had been stolen, would ask for a written guarantee that the article had been legitimately obtained. The dogs, which were stated to be of the value of £7 each, were bought by the School for 6*s*. each. If a diamond ring worth £50 was offered for a couple of sovereigns, one generally had some suspicion that something was wrong. Apparently this gentleman had no suspicion of that sort. The College explanation also stated "that the dogs found in the possession of Hewett at the time of his arrest were, so far as is known, not of the type required by the College; they were never offered to, and were consequently not seen by, anyone at the College." They were not seen by anyone at the College, Lord Banbury continued, because the detective had stopped the man at the door of the College. It was proved in evidence that he was going to take them to the College, and that he would have received 6*s*. each for them. In the report of the Clerkenwell Police-court case it was stated that "a boy of 14, who said he was 'animal attendant' at University College, said he had known the defendant for about four

weeks. He helped a man named Jackson to fetch dogs to the College." Lord Banbury said that it was curious that a boy of 14 should be employed to look after animals. When he brought in his Bill in the House of Commons to prevent dogs being vivisected, Dr. Chapple, then a member of the House of Commons, gave as a reason against the Bill that dogs were cheap. It would cost, he added, £5 to get a suitable monkey. It was evident, therefore, said Lord Banbury, that one of the reasons why it was necessary to have dogs for this purpose was because they could be obtained cheaply; and now they knew how it was that they were obtained. Dr. Swan, in giving evidence before the Royal Commission, was asked: "In addition to that, is it not the case that dogs are more expensive than other animals, so that the very lowest motive, the motive of pocket alone, would cause them to prefer other animals?" Let their lordships mark his answer: "You can steal a dog anywhere." Dr. Swan was then asked: "You do not mean to imply, do you, that the dogs used in physiological laboratories are stolen and not paid for?" He replied: "I have stolen dogs in my early days." Continuing, Lord Banbury said he thought it was clear that the habit of receiving stolen dogs was somewhat prevalent at these institutions. It was a matter which was very difficult to trace, but two cases had been brought to light in the last fortnight. He urged that something should be done to prevent this practice.

Earl RUSSELL said that he was not an anti-vivisectionist, but he suggested that stray dogs should be taken for this purpose that otherwise would be destroyed. That, he understood, was forbidden by law at present, but he would be glad to see that law repealed. If it could not be repealed, he suggested that it might be provided by Statute that dogs should not be used by physiological laboratories unless they had been bred by the laboratories themselves. One breeding establishment might be set up to supply several laboratories, and they might then be prohibited from using any dog of which they could not trace the history from birth. That would prevent this particular evil. Speaking not only for himself but for all lovers of dogs, he believed the public conscience had been roused by what had happened and was entirely in sympathy with the remarks both of Mr. Fry (the magistrate) and of Lord Banbury, and it would not rest until something had been done to make it impossible in the future.

Lord DESBOROUGH, replying for the Home Office, said that he did not believe for a moment that University College encouraged the stealing of dogs. The College authorities bought dogs for physiological purposes—he could not go into the matter as to whether it was a wise thing to do or not—from recognised dealers, and not only that, but they said that they asked for a written guarantee that the dog had been honestly come by. The College had no reason to believe that Hewett was not an honest dealer in dogs. He (Lord Desborough) fully joined in the sympathy which had been aroused in this case, and he would take any strong measures he could if he thought that his own dogs were going to be stolen and experimented upon. But these two instances did not make out a very strong case for the suggestion that this was a very prevalent thing, and the imputation that University College encouraged it seemed to him to be absolutely unfounded. He thought they had taken every precaution they possibly could. With regard to Earl Russell's suggestion he was told that every year in London 25,000 dogs were destroyed. He fully agreed with Earl Russell that those were the dogs which should be used for this purpose, always admitting that dogs should be so used, and he had defended that in the House before. He had no right on this new suggestion to speak for the Home Office, but as far as he knew they did not think it was a very wise provision in the Act of 1906, which absolutely prevented dogs that were going to be destroyed from being used for a useful purpose before they were painlessly destroyed. He did not know whether Earl Russell saw the other day that in destroying dogs they were burned and subsequently poisoned.

Earl RUSSELL: Subsequently poisoned?

Lord DESBOROUGH said he read in a newspaper that an accident happened to the asphyxiating chamber, the top was blown off, and the dogs were injured and subsequently poisoned. He would no more make an accusation against the Battersea Dogs' Home on that account than he would against the London School of Physiology that they were in the habit of buying stolen dogs or wishing people to steal dogs. He did not know what Lord Banbury wanted. They could not alter the law relating to vivisection that night, and he had not made any suggestion. But as to the suggestion of Earl Russell, he personally thought—and he believed the Home Office would agree—that it was a most excellent one, and he hoped something might be done in that direction.

Lord BANBURY said he would suggest that the Home Office should give instructions to the police to investigate the approaches to these different schools extremely carefully, and to prosecute in any case in which they found that a dog had been stolen, or had been received knowing that it had been stolen.

THURSDAY, DEC. 9TH.

Births and Deaths Registration Bill.

The Births and Deaths Registration Bill passed through Committee.

MONDAY, DEC. 13TH.

The Births and Deaths Registration Bill was read the third time and passed.

TUESDAY, DEC. 14TH.

The Coroners (Amendment) Bill.

The Lord CHANCELLOR moved that the Commons' amendments to the Coroners (Amendment) Bill should be agreed to. He said that he had gone through them very carefully, and he advised their lordships to agree with all the amendments.—The amendments were agreed to.

HOUSE OF COMMONS.

WEDNESDAY, DEC. 8TH.

University of London Bill.

The University of London Bill, as amended in Standing Committee, was considered on Report and read a third time.

Infantile Paralysis.

Mr. REMER asked the Minister of Health if his attention had been called to the outbreak of infantile paralysis in this country; if he was aware that in the United States of America, where the outbreak had been more serious, medical research had revealed that this complaint was caused by the exposure of uncooked foods to contamination with germs contained in dust, and that consequently a law had been passed providing in that country all such foods must be covered; if his Ministry had made any inquiries into this matter; and if he was prepared to make any statement.—Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied: The answer to the first part is in the affirmative. As regards the second part, my right hon. friend understands that, although it was claimed in America that the virus if this disease had been found in the dust of sick rooms, this claim has not been confirmed, and he is advised that there is no direct evidence that the virus is in fact transmitted by uncooked food, and there is no reason to think that this means of transmission of the disease is an important factor in the present prevalence.

Mental Deficients and Marriage.

Sir ROBERT GOWER asked the Minister of Health whether he would consider the desirability of introducing legislation making it a punishable offence to marry, or connive in the marriage of, any person known to be certified as a mental defective under the Mental Deficiency Acts.—Mr. NEVILLE CHAMBERLAIN replied: My hon. friend's suggestion is certainly worthy of consideration, but I doubt whether there is a sufficient measure of agreement as to facts or conclusions to justify the introduction of legislation at present.

Deaths from Lead Poisoning in the Pottery Trade.

Mr. SHORT asked the Home Secretary the total number of deaths due to lead poisoning in the pottery trade during 1925; the average age of the deceased; and whether an improvement was shown on 1924.—Captain HACKING (Under Secretary for Home Affairs) replied: The total number of deaths in 1925 was 5, and the average age 58. These figures are better than the corresponding figures for 1924, which were 18 and 52.

Inspector of Vivisection Laboratories.

Mr. BROMLEY asked the Home Secretary whether Lieut.-Colonel Lelean was still acting as inspector of vivisection laboratories under the Act; whether he had recently paid a visit to University College in that capacity; and whether he himself was the former holder of a vivisection licence.—Captain HACKING replied: Colonel Lelean resigned his post as inspector on Feb. 14th last. The rest of the question, therefore, does not arise.

Education Authorities and Physically Defective Children.

Mr. ROBERT MORRISON asked the President of the Board of Education how many local education authorities had made complete provision for the number of physically defective children under their jurisdiction; how many had made partial provision; and how many had not yet made any provision.—Lord E. PERCY replied: The question whether complete provision exists in any particular area for dealing with physically defective children is a matter of opinion, as it depends upon the thoroughness of ascertainment and on the nature of the standards adopted. In

263 areas provision is made for the education of substantial numbers of physically defective children at special schools, and in about 140 areas provision is made for the treatment of cripple children by way of orthopædic or similar schemes. In about 40 areas no provision has so far been made.

Mr. ROBERT MORRISON asked the President of the Board of Education the present estimated number of physically defective children who might benefit by admission to special schools; how many of these children were at present in special schools; how many in public elementary schools; how many in other institutions; and how many were not attending any school.—Lord E. PERCY replied: The total number of children ascertained by local education authorities in 1925, the latest year for which complete returns are available, as physically defective within the meaning of Section 55 of the Education Act, 1921 (including those suffering from some form of tuberculosis, those classed as cripples, and those classed as "delicate"), was 142,889. Of these, 25,769 attended special schools during that year, 94,332 were at public elementary schools, and 3857 were in other institutions, while 18,931 were not attending any school. As regards the children attending public elementary schools, it should be remembered that most of the delicate children require only a relatively short period at an open-air school, and the majority of the cripples can be so far benefited by orthopædic treatment as to render them capable of profiting from the instruction in ordinary elementary schools.

Approved Societies and Dental Fees.

Mr. RHYS DAVIES asked the Minister of Health whether his attention had been drawn to the fact that several large approved societies in Lancashire, providing dental benefit for their members, had refused to adopt the scale of fees and conditions of service as agreed upon by the Dental Benefit Joint Committee; that a considerable number of dentists had indicated their willingness to continue to do the work on the old scale of fees; that the Public Dental Service Association had in consequence informed such dentists that they were liable to be struck off the Dental Register by the Joint Dental Board; and what action he proposed to take in this matter.—Mr. NEVILLE CHAMBERLAIN replied: I am aware that a few approved societies in Lancashire and elsewhere are still reluctant to adopt the new scale of fees and conditions of service for dental benefit, and that some of them claim that they have obtained from a number of dentists an indication of willingness to accept a lower scale of fees. The opposition to the new scale is, however, daily growing less, as the advantages of the new arrangements drawn up by the Dental Benefit Joint Committee become more fully appreciated. As regards the third part of the question, I am informed that the Public Dental Service Association has called the attention of dentists to a warning notice issued by the Dental Board against anything in the nature of canvassing by or on behalf of dentists with a view to securing work by an offer to accept fees below those of the new agreed scale. I do not think that the circumstances call for any action on my part.

Health Insurance Contributions and Benefits.

Mr. THURTLE asked the Minister of Health if his department was in a position to state the amount of money paid by way of contributions to the health insurance scheme from the date of the Armistice to the year ending Dec. 31st, 1925; and the amount actually paid out to insured persons by way of benefits during the same period.—Mr. NEVILLE CHAMBERLAIN replied: The amount of money paid by way of contributions to the health insurance scheme in England and Wales for the seven years from Jan. 1st, 1919, to Dec. 31st, 1925, was £154,000,000. Of the amount of £143,000,000 spent on benefits in England and Wales during the same period, £86,000,000 represents amounts actually paid out to insured persons by way of benefits, and £57,000,000 the cost of medical benefit provided for them through insurance committees. The information asked for as respects the part of the year 1918 subsequent to the date of the Armistice is not available, as such statistics are compiled for complete calendar years only.

FRIDAY, DEC. 10TH.

Anterior Poliomyelitis after Vaccination.

Mr. GROVES asked the Minister of Health if he would make inquiries as to why no mention of vaccination was made on the death certificate of the young man of 19, whose name had been privately given to his department, who recently died from acute anterior poliomyelitis 14 days after vaccination.—Mr. NEVILLE CHAMBERLAIN replied: The certification of the cause of death is a matter which rests entirely with the medical practitioner in attendance. Inquiries have, however, been made into the circumstances associated with the death in question, and I am informed that vaccination was not entered on the death certificate because in the opinion of the certifying practitioner vaccination was not a primary, secondary, or contributory cause of death.

MONDAY, DEC. 13TH.

THE CORONERS (AMENDMENT) BILL.

The Coroners (Amendment) Bill was considered on Report.

Mr. GATES moved a new clause on behalf of the London County Council, providing that whole-time coroners appointed after the passing of the Act should make contributions towards their pensions at the rate of 5 per cent. of their salaries, and that they should be paid pensions calculated according to their length of service.

As there was no seconder, the amendment fell through.

Mr. PALING moved to omit Clause 23, which provides for fees to medical witnesses who, at the request of a coroner, make a post-mortem examination or attend an inquest. He said that Mr. Cook, a trade-union secretary, had gone to Moscow to bring back some new trade-union ideas. He was not sure that Mr. Cook would not do better if he went to the British Medical Association.

Lieut.-Colonel FREMANTLE: He would learn patriotism.

Mr. PALING said that he only moved the amendment to call attention to the difference in the treatment accorded to the doctors and the miners. He did not object to the Bill giving doctors increased remuneration for attending inquests. They probably deserved it.

Captain HACKING (Under Secretary for Home Affairs) said that the effect of the amendment would be that medical men would not get any fees at all.

Mr. RHYS DAVIES said that the amendment was put down as a protest against the manner in which the increase of fees had been made in committee. He asked if there were not some communications between the Home Office and the British Medical Association in the first instance as regarded the amount of fees to be inserted in the Bill.

Lieut.-Colonel FREMANTLE denied that there had been any machinations between the Government and the British Medical Association. He had personally come into the House of Commons untrammelled by any responsibility to the British Medical Association. He only supported an increase of medical fees in so far as he thought that it could be justified by the needs of the case from the point of view of the State. In this instance he and other of his hon. friends had not accepted the proposals made by the British Medical Association, and had put forward other proposals. They had a very hard job to convince the representative of the Home Office of the necessity and right of their case.

Dr. VERNON DAVIES protested against the attack made on the medical profession by the mover of the amendment. It was entirely unnecessary to make a comparison between medical men and miners. Speeches of that kind were apt to give a very wrong impression. Anything which endangered the good feeling between medical men and their patients was detrimental. If a guinea was a fair fee in 1844, surely at this time there should be some slight increase. There was a tendency in the Labour party to belittle the medical profession, and the harm that might do in the country might be very great.

The amendment was negatived.

The report stage was concluded.

On the motion for the third reading, Mr. RHYS DAVIES said that the Labour party had a very high regard for the medical profession.

In reply to questions, Captain HACKING said that the Home Secretary would direct coroners to allow trade-union representatives to attend inquests, and to allow medical men representing relatives to be present at post-mortem examinations.

The Bill was read the third time.

Vivisection Experiments on Dogs at University College.

Sir ROBERT GOWER asked the Home Secretary the number of dogs which had been used for vivisectional experiments at the University College School of Physiology during the past two years; and how many of such dogs had been used for vivisectional demonstrations before students.—Captain HACKING replied: 1147 dogs have been used for experimental purposes at University College during 1925 and 1926. Of this number 21 were used for demonstrations before students. By Section 3 of the Act it is laid down that experiments for this purpose may only be performed if a certificate is given by two of the scientific authorities specified in the Act that the experiments are absolutely necessary for the due instruction of the students, with a view to their acquiring physiological knowledge, or knowledge which will be useful to them for saving or prolonging life or alleviating suffering. Such experiments are required to be performed under anæsthetics, and the animals must be killed before recovering consciousness. All but 28 of the total number of animals were kept under anæsthetics during the whole of the experiment and destroyed before recovering from the anæsthetic.

Spahlinger Tests on Cattle.

Mr. HURD asked the Minister of Agriculture if his department had received a copy of the Report of the Geneva

State veterinary surgeons recording the success, which they stated to be beyond all hopes, of the Spahlinger tests now completed there with antituberculosis vaccine on cattle; and whether he contemplated any further steps to estimate the value of these reported results.—Mr. GUINNESS replied: The Ministry's knowledge of the tests of Mr. Spahlinger's vaccine which have recently taken place in Switzerland is limited to accounts which are published in the Press. In 1924 a committee was formed, under the chairmanship of Commander Bayley, R.N., which included prominent agriculturists, doctors, and veterinary surgeons. I am informed that this committee had complete plans for experimental trial of the vaccine, but was unable to obtain any vaccine from Mr. Spahlinger, and therefore the matter dropped. I understand that the committee is still in being, but I am unable to say whether it will be prepared again to undertake the trial of this vaccine.

Enforcement of Food Preservative Regulations.

Mr. TINNE asked the Minister of Health whether he was aware that the recent industrial unrest had diminished the demand for canned goods, and left traders with stocks which would otherwise have been absorbed; and would he postpone till June 30th the enforcement of the Public Health (Preservatives in Food) Regulations, 1925, so far as concerned canned peas and beans and Californian evaporated fruits.—Sir KINGSLEY WOOD replied: My right hon. friend has received representations to the effect stated in the first part of the question, and he proposes to deal with the matter by suggesting to local authorities that during the first part of 1927 they should abstain from proceeding under the regulations where reasonable attempts have been made to dispose of old stock.

Origin of Small-pox Cases in Brondesbury.

Mr. LANSBURY asked the Minister of Health whether the two small-pox patients who were removed to the Willesden Isolation Hospital from a nursing home in Brondesbury, on or about Oct. 29th last, had been vaccinated; how long these patients were under medical treatment in London before it was discovered that they were suffering from small-pox; whether it was now possible to say where these persons came from on their arrival in London; and what steps had been taken to trace the origin of the disease.—Sir KINGSLEY WOOD replied: My right hon. friend is informed that both these patients had been vaccinated; the interval between vaccination and attack by small-pox was approximately 26 years in one instance and 44 years in the other. In one instance the patient was under medical treatment for 19 days, and in the other for four days, before a diagnosis of small-pox was made. Both persons had been staying in Paris before their arrival in London, and the first case was presumably infected in France, while the second case was a contact with the first.

Government and Washington Hours Convention.

Mr. BENJAMIN SMITH asked the Minister of Labour whether, in view of the change in the industrial situation, it was the intention to proceed forthwith with the ratification of the Washington Hours Convention.—Mr. BETTERTON (Parliamentary Secretary to the Ministry of Labour) replied: As stated on Dec. 8th, it is the intention of the Government to consider, as soon as they conveniently can, the results of the London Conference and their bearing upon the question of the ratification of the Washington Hours Convention. Until that consideration has been given, I am unable to make any further statement in the matter.

Family Pension Scheme for All-India Services.

Mr. HAYES asked the Under Secretary of State for India whether a State contribution was provided for in the family pension scheme now under the consideration of the Government of India for the All-India Services other than the Indian Civil Service; and, if so, whether this State contribution was to be similar to that granted to the Indian Civil Service Family Pension Fund.—Earl WINTERTON replied: A Family Pension Scheme for European members of the All-India Services, including the Imperial Police Service, is at present under the consideration of the Government of India. The Government of India's views have not yet been received, and I regret that I cannot give any details of it at present. The services affected will be consulted before any scheme is brought into operation.

TUESDAY, DEC. 14TH.

Vivisection Experiments on Dogs and Cats in London.

Sir ROBERT GOWER asked the Home Secretary how many dogs used for vivisectional experimental purposes in registered premises in the London area since Jan. 1st of this year were not kept under complete anæsthesia during the whole time of the experiments; the nature of the experiment on each of such dogs; at which schools of physiology such experiments were respectively made; whether reports had been received from the authorities of such schools giving the reasons why such animals were not kept under complete anæsthesia during the continuance of the experiments; and what such reasons were.—Captain HACKING replied: 16 at University College, 5 at the Brown Institution. I cannot undertake to give details of individual experiments, but I may say that the object of the experiments was in 7 cases the investigation of dental diseases, in 5 insulin research, in 4 investigation of diseases of the tonsils, and in 5 investigation of the relation of the gall-bladder to intestinal diseases. The last part of the question appears to be based on a misapprehension. The Act requires no such reports as are mentioned; what it does require is that before any experiment can be performed which involves keeping the animal alive after it recovers from the anæsthetic a certificate must be given by two of the scientific authorities mentioned in the Act to the effect that killing the animal before it so recovers would necessarily frustrate the object of the experiment; and further, that before any such experiment is performed on a cat or dog, an additional certificate must be given by two of the same scientific authorities that for specified reasons the object of the experiment will be necessarily frustrated unless it is performed on an animal similar in constitution and habits to a cat or dog, and that no other animal is available for such experiment. These certificates were duly given in each of the cases mentioned above.

Young Man's Death after Vaccination.

Mr. BRIANT asked the Minister of Health whether the case of the young man of 19 who recently died about 14 days after vaccination, the name of whom had been given privately to him in a letter, dated Nov. 19th, from Mr. Arnold Lupton, had been reported to the Committee on Vaccination now sitting.—Sir KINGSLEY WOOD replied: Yes, sir.

Ministry of Pensions Appointments.

Mr. DENNISON asked the Minister of Pensions whether he intended to make further appointments of established officers in substitution for officers of the P class as area and deputy chief area officers; and what was the estimated extra cost to public funds of this policy during the current financial year.—Lieut.-Colonel G. F. STANLEY replied: It may be necessary from time to time to effect transfers of established officers to other posts in the Ministry as the fall in the volume of work may necessitate, as it is not administratively possible to exclude area offices from the field of consideration for such transfers. There is no additional charge on public funds involved in the appointments to which the hon. Member refers, the established officers mentioned having become available for appointment in area offices in consequence of savings effected in other branches of the Ministry.

PENSIONS FOR HOSPITAL STAFFS.—The General Council of King Edward's Hospital Fund for London has now decided that in making annual grants to hospitals they will take into account the amount spent on contributory pensions schemes. The draft scheme, based on the report of a special committee under the chairmanship of Mr. W. J. H. Whittall in 1919 (THE LANCET, 1926, i., 679 and 729), has continued to make progress since the Mansion House Conference of May 19th last. On July 5th a Provisional Council was formed comprising representatives of 69 hospitals and by Nov. 1st 88 hospitals had joined, representing 11,579 beds. Quotations are now to be invited from insurance companies for the various benefits contemplated. The annual premium is to be 15 per cent. of salary and emoluments (the latter being roughly the money value of board and lodging), two-thirds to be paid by the hospital and one-third by the individual. The policies are to mature at the age of 60, so that retirement can take place then or later in accordance with the regulations of the hospital concerned. The Provisional Council has defined the institutions eligible for participation in the scheme as follow: (*a*) voluntary hospitals; (*b*) consumption sanatoriums; (*c*) hospitals for incurables; (*d*) convalescent homes; (*e*) dispensaries; (*f*) King Edward's Hospital Fund for London, the Metropolitan Hospital Sunday Fund, the Hospital Saturday Fund, and the Hospital Saving Association; (*g*) private hospitals, mental and others, not run for profit; (*h*) the Incorporated Association of Hospital Officers; (*k*) nurses' coöperations, incorporated and approved; (*l*) Queen Victoria's Jubilee Institute for Nurses and affiliated associations and branches; (*m*) Ranyard nurses; (*n*) voluntary welfare centres; (*o*) the College of Nursing and the Royal British Nurses' Association; (*p*) such other kindred classes of institution as the Provisional Council may determine—and Sir Edward Penton, chairman of the Provisional Council, hopes that the premium rates may be settled early in the new year so that the scheme may then be ready for launching.

Medical News.

UNIVERSITY OF LONDON.—At examinations held recently the following candidates were successful :—

THIRD (M.B., B.S.) EXAMINATION FOR MEDICAL DEGREES.

With Honours.—Alexander C. Dalzell (*b*, *e*), Lazarus Hartston (*a*), Maurice Mitman (*a*, *d*), and Gerald H. Steele (*a*, *d*, University Medal).

(*a*) Distinguished in Medicine. (*b*) Distinguished in Pathology. (*d*) Distinguished in Surgery. (*e*) Distinguished in Midwifery.

Pass.—Dorothy R. Adams, Clifford E. Allen, Harold Awrounin, Shriharsh Chintaman Bakhle, James R. Beagley, Samuel A. Beards, Louis F. Beecle, Eric H. J. Berry, Edith D. Bowie, Robert J. Cann, Rose A. Carter, Evangeline A. Clark, John S. Coleman, Hugh A. Cooper, Arthur C. Counsell, Anne A. Craig, Samuel S. Cruden, Howell J. Davies, Muriel Davies, Doris L. Delittle, John C. G. Dickinson, John D. Durance, Elaine Œnone H. Earengey, Donald C. Fairbairn, Maurice Fishman, William Fletcher-Barrett, Wilfred F. Gaisford, Stanley C. Gawne, Percy L. Goitein, Minnie Gosden, Charles R. M. Greenfield, James I. Griffiths, Reginald D. Gross, Leslie W. Hale, John G. Hamilton, Kempton P. Hare, Richard B. Hawes, William E. Heath, Frances M. Heaton, James C. Heweston, Norman G. Hill, Frederick D. M. Hocking, David P. Holmes, Benjamin B. Hosford, Douglas V. Hubble, Amelia M. Ison, Clifford James, Herbert N. James, Iorwerth H. Jones, Robert O. Jones, Isabel M. Jordan, Gladys Kay, Greta M. Langdon, Reginald H. Leigh, Reginald H. Little, George K. Loveday, Elsie Lyons, Margaret B. MacDonald, Norman W. MacKeith, Evelyn T. D. Maclagan, Douglas H. McLeod, Ian McPherson, Dorothy B. Marling, Mary A. Marshall, Stephen K. Montgomery, John G. Morgan, Dorothy L. Neate, George J. V. Nelken, George A. H. Norman, Herbert L. Oldershaw, Catherine E. Orr-Ewing, Evelyn M. Pakeman, William E. Parry, Charles E. Pearsons, Arthur D. Pegg, George E. G. Peirce, Louis M. J. R. Pilot, Isaac Price, Henrietta Procter, Muriel F. Prout, Daniel M. Pryce, Bertine M. Rix, Lewis H. Savin, Jacobus W. Schabort, Jonathan A. Screech, Eric C. Seward, Mary M. Sillito, Alan S. Simpson, Anthony J. D. Smith, William E. Snell, Ivor P. Spurrell, Eustace F. Stead, Edith A. Straker, Stephen V. Strong, Daniel E. Thomas, James D. S. Thomas, Oxburgh G. Tippett, John R. Tree, Betty C. Waters, Edith M. Webb, Arthur S. Wesson, Violet M. Weston, Edward A. White, Doris Williams, Jane C. Williams, Emily A. C. Wilson, Herbert F. Wilson, and James T. Wybourn.

The following students have passed in one of the two groups of subjects :—

Group I.—Douglas E. Barton, Doris D. Brown, Isabella M. G. Butler, Irene F. Callender, Tom E. Davies, Arthur E. de Chazal, Jean M. Dollar, Joel Gabe, Allen C. Hancock, Lynette Hemmant, Mary H. McC. Huggett, Rowland M. Jones, Eileen M. King, Miriam A. Lawson, William Leslie, Albert H. Levers, Michael F. B. Lynch, Barbara H. Mitchell, Doris Reynolds, Sibyl D. Rodgers, Ephraim S. Rudaizky, Margaret V. Saul, and Horace S. Townsend.

Group II.—William A. Ball, Arthur L. Banks, Raymond E. Barrett, Hilda M. P. Bond, Derek G. Bown, Denis A. Brigg, Helen M. Browne, Maurice R. Burke, Alfred L. Canby, Donald C. MacC. Ettles, John Evans, Leonora S. Evans, Bernard W. Goldstone, Donald P. Gray, Henry F. Hiscocks, Laurence Holmes, John G. Kingsbury, Edgar D. Lawrence, Joan J. Lush, Alexander C. MacLeod, Charles W. Marshall, Hakim M. Mikhail, Anna P. Momtgomery, Reginald T. Payne, Alice L. Robson, Edward H. Roche, Moses Sendak, Kenneth S. Smith, James E. Swyer, Mary C. Tugman, Mary M. Tulloch, John S. Whitton, Beatrice A. Wilkinson, Harry K. Williams, and Eric Wornum.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At a meeting of the Council, held on Dec. 9th, Sir Berkeley Moynihan, the President, in the chair, the resolution carried at the annual meeting of Fellows and Members, asking the Council to take a postal vote of Fellows and Members on the question of admitting Members to direct representation on the Council of the College, was referred to a Committee for consideration.—Mr. E. Rock Carling, surgeon to the Westminster Hospital, Mr. A. E. Webb Johnson, surgeon to the Middlesex Hospital, and Mr. Claude Frankau, surgeon to St. George's Hospital, were elected Members of the Court of Examiners. Mr. C. H. Howkins, dental surgeon to the Birmingham Dental Hospital, was elected a Member of the Board of Examiners in Dental Surgery.—Sir Berkeley Moynihan was reappointed a representative of the College on the Court of Governors of the University of Birmingham, and Mr. Victor Bonney was appointed a representative of the College on the Central Council for District Nursing in London.—Diplomas of Fellow were conferred upon 27 candidates who passed the recent examination. Of 101 candidates presenting themselves for examination, 31 passed, but R. A. Brews (London), C. I. N. Morgan (St. Bart.'s), F. T. Ridley (Birmingham and London), and A. J. Wrigley (St. Thomas's and Guy's), who satisfied the examiners, are not eligible to receive the diploma until they have attained the requisite age. The following are the names and medical schools of the successful candidates :—

N. Asherson, Univ. Coll. ; T. S. M. Barnett, Melbourne and Guy's ; W. E. Barnie-Adshead, Birmingham and Guy's ; R. C. Brown, Durham and London ; E. A. Coldrey, St. Bart.'s ; W. I. Daggett, Cambridge and King's Coll. ; V. W. Dix, Cambridge and London ; S. J. H. Griffiths, Bristol, Guy's, and London ; A. J. C. Hamilton, Edinburgh and London ; C. W. Harris, Toronto and London ; P. R. Hawe, Liverpool ; K. W. Heritage, London ; A. L. P. Jeffery, St. Thomas's ; P. Kiely, Cork and London ; A. C. King, London ; P. B. Kittel, Cambridge and St. Bart.'s ; E. D'A. McCrea, Dublin ; F. A. MacLaughlin, Belfast ; P. Malpas, Liverpool and London ; J. M. D. Mitchell, Aberdeen and St. Bart.'s ; M. F. Nichols, Guy's and St. George's ; K. O. Parsons, Guy's ; G. D. Robb, Otago ; J. S. Rowlands, Liverpool and Univ. Coll. ; I. G. Sacks, Dublin ; and L. H. Savin, King's Coll.

Diplomas of Member were conferred upon the following :—

A. C. Jepson, Cambridge and Guy's ; P.N. Lahiri, Calcutta and Guy's ; and L. A. Richardson, Cambridge and St. Thomas's.

Licences in Dental Surgery were conferred upon the following 83 candidates :—

L. R. Armstrong, S. K. Arnold, J. G. Avent, L. G. Baker, H. Bennison, M. Bewlay, I. Bishko, S. D. Bradley, E. J. Buxton, L. Catchpole, O. N. Catchpole, E. H. Clark, M. H. C. L. Clutterbuck, W. J. Coe, E. C. Councell, Mary E. O. Cross, Eileen M. Currie, R. G. Daplyn, E. N. Davey, D. G. Doran, H. W. Duchesne, C. M. Duckworth, N. S. Farnes, J. E. Forrest, I. Frankel, W. F. Fuller, Beryl Gardiner, G. D. Gibling, G. G. Grainger, R. Y. Greenfield, D. Gure, R. T. Hale, H. R. Hill, C. Hofman, S. S. How, L. H. Ide, H. O. B. James, H. W. Johnson, K. S. Keele, K. S. Law, H. P. Lawson, K. Lees, M. Lewis, A. Livingston, M.B., Ch.B., Marjorie E. E. Lodge, L. S. Lyons, A. McEwen, L. J. Martin, G. H. Mason, H. A. Mills, D. Morrison, E. R. Morten, L. G. W. Papenfus, M. M. Pellatt, G. R. Pidgeon, S. C. Post, G. Quinn, G. Radloff, P. C. Ranye, J. A. Reader, H. E. Rose, C. A. Rumball, J. J. Sanders, Luba Scott, G. J. C. Sem, A. Simaika, C. Skinner, E. S. Smith, Dorcas E. Sproulle, J. Stazunsky, J. W. Storey, C. T. Tayler, H. E. C. Terry, D. F. Turner, S. E. Wallis, J. Weakley, C. Welt, C. R. Wilshaw, C. K. Wilson, W. A. Wilson, H. W. Wright, H. S. Wright, and H. H. Wydell.

UNIVERSITY OF SHEFFIELD.—The following have passed the Final Examination for the degree of M.B., Ch.B.: George H. Arnison and Edna M. Stedeford.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.—The annual meeting of the College was held on Dec. 2nd. Dr. George M. Robertson was re-elected President for the ensuing year ; Sir Robert Philip was nominated Vice-President ; and Dr. G. Lovell Gulland, Dr. R. A. Fleming, Dr. Robert Thin, Dr. John Orr, and Dr. Edwin Matthew were re-elected to form the Council. At an extraordinary meeting held on the same day, Dr. Edward Arnold Carmichael and Dr. John Robert Lord were elected Fellows of the College. Dr. William Russell and Dr. John Orr were elected representatives on the Board of Management of the Royal Infirmary of Edinburgh.

UNIVERSITY OF MANCHESTER.—At examinations held recently the following candidates were successful:—

FINAL M.B. AND CH.B. EXAMINATION.

Helen G. M. Bennett, Pieter Bester, H. V. Crabtree, Margaret Egan, Ernest Firth, Ernest Heard, John Hunt, G. W. Jones, Joseph Parness, Harry Pigott, R. H. Poyser, Mary I. Prentice, Leonard Rosenthal, B. R. Sandiford, W. S. Slater, Donald Starr, and Florence V. Stephen.

The following candidates satisfied the examiners in the subjects indicated :—

Forensic Medicine.—Soloman Bernstein, Vera Urmson, and G. R. Walker.

Medicine.—G. R. Walker.

Hygiene and Preventive Medicine.—R. H. Barnes, Soloman Bernstein, Ralph Edmondson, Dorothy Guest, James Kemp, G. L. Normington, L. C. Peringuey, I. M. Preston, Nora Ridehalgh, R. F. Sheppard, R. H. Tootill, and Vera Urmson.

Obstetrics and Surgery.—R. S. Abraham, Dorothy Arning, Harold Arstall, A. H. Baker, Doris Bernard, Dorothy M. Bradley, Muriel M. Edwards, Arthur Hancock, G. D. Hithersay, J. H. Jones, James Kemp, H. E. Martin, Robert Newton, R. P. Osborne, H. A. Palmer, G. H. Racklyeft, Norah Regan, Marshall Robinson, Leonard Rosenthal, Eleanor B. Schill, Herbert Townley, F. F. Waddy, Josephine Walmsley, and K. H. Watkins.

Obstetrics.—S. K. Appleton, H. J. Brennan, S. L. Rowley, and Alfred Thomas.

THIRD M.B. AND CH.B. EXAMINATION.

Pathology.—M. M. Barritt, G. L. Brown (with distinction), Alice M. Butterworth, Alexandra W. Groves, J. H. Pattyson, Marian M. Reekie, J. F. Wilkinson, and Frederick Wraith.

Pharmacology.—Alexander Allan, H. S. Bagshaw, F. H. Bentley, Hedley Boardman, Edith M. Booth (with distinction), B. R. Bramwell, R. O. Brooks, J. A. K. Brown, Bessie H. E. Cadness, T. H. Chadwick, D. L. Cran, J. M. Greenwood, Christobel M. Hall, G. B. Hardman, W. H. Harris, E. Z. Levy, R. W. Luxton, Mary I. C. Mackintosh, A. S. McGowan, F. N. Marshall, A. B. Moffatt, W. H. Newton, J. R. Nuttall, H. J. O'Loughlin, J. H. Pattyson, G. W. Plowright, B. P. Robinson, Donal Sheehan, C. F. Stott, J. D. Todd, Nellie Wilson, and L. C. Wright.

MEDICO-LEGAL SOCIETY.—The annual dinner of this society was held on Dec. 10th at the Holborn Restaurant, with the President, Lord Justice Atkin, in the chair. Dr. A. S. Woodwark proposed the toast of "Medicine and Law," Sir John Rose Bradford replied for the medical, and Dr. A. H. Coley, President of the Law Society, for the legal profession. Mr. Justice Greer, proposing the toast of "The Medico-Legal Society," mentioned how closely the respective sets of problems of the two professions resembled one another. Doctors had often to diagnose on subjective symptoms, without being able to see inside the patient, and judges had to decide cases on evidence that might be imperfect or even dishonest. Two of the most important subjects of common interest to both to-day were those of the effects of nervous shock and of insanity. So far from medical witnesses being reluctant to give a plain "Yes" or "No," they were often positive when they should say, "Neither I nor anybody else can tell." The question of nervous shock and its effect was a typical one in which positive assertion was to be avoided. For his part he was always inclined to give the subject the benefit of the doubt. Doctor and lawyer were alike handicapped by not being able to see the sufferer as he would be five years afterwards. In their attitude to mental disease doctors and lawyers had taken up very different positions, but there was not so much difference between them as might at first sight appear. The issue to be decided by trial was not whether a man was suffering from mental disease, but whether that disease was of such a character that he could not be held responsible for his acts, or, under the McNaghten ruling, that he either did not know the nature and quality of his acts or, if he did, that he did not know he could be punished for them. The law had to be laid down with great strictness, and modified where necessary by those whose duty it was to advise His Majesty when to exercise the Royal prerogative. Juries were somewhat inclined to sympathy with the medical view and the "unwritten law," and he saw no case for relaxing the law as at present laid down. Lord Justice Atkin, in responding for the Medico-Legal Society, remarked that the distinction between insanity and "legal insanity" was one drawn by very few people in fact, but that there must be a degree of insanity fixed by law as a boundary between criminal responsibility and irresponsibility. It was important to abstain from language that might emphasise the difference in the views held by each profession. Not long ago a high judicial authority had denounced as fantastic the view that a person who committed a crime under an irresistible impulse produced by disease should be held irresponsible. On the contrary, that doctrine was unanswerable. The committee over which he presided had accepted it, and lawyers such as Sir Archibald Bodkin, the late Sir Richard Muir, Sir Herbert Stephen, and Sir Ernley Blackwell were not likely to hold "fantastic" views on any subject. His lordship also suggested that much good would result if doctors and lawyers could hear lectures from one another on the administration of the Workmen's Compensation Act. The toast of "The Guests" was proposed by Dr. R. Henslowe Wellington and answered by Lieut.-Colonel C. T. Samman, Junior Warden of the Apothecaries' Society, and Mr. A. MacMorran, K.C., the Treasurer of the Middle Temple.

DINNER TO SIR BERKELEY MOYNIHAN.—On Dec. 8th Sir Berkeley Moynihan was entertained to dinner at Leeds by the British Medical Association in Yorkshire. Mr. Alfred Gough presided, and in proposing the toast, "The President of the Royal College of Surgeons," said that for at least a quarter of a century Sir Berkeley Moynihan had been one of the most prominent figures in British surgery. His election to the Presidency of the Royal College of Surgeons did not amount to the conferment of a distinction, but rather to the recognition of a distinction. Mr. A. L. Whitehead recalled the time when Sir Berkeley Moynihan was a student at the old Leeds Medical School. When he went to the Leeds Infirmary he had found there a wonderful group of surgeons—Jessop, McGill, Ward, and Littlewood. The only one of the group remaining was the greatest of them, Sir Arthur Mayo Robson. It might be said of Moynihan that he had acquired the best from all of them. At first he had had a hard struggle and some disappointments, but his book, "Abdominal Surgery," had aroused interest all over the world, and his work had received wider and wider recognition. Perhaps the qualities which most helped him to become a successful surgeon were his insistent attention to detail, combined with a wide general outlook, and his insistent desire to improve technique. His powers of expression would have made it easy to leave surgical practice for literature or politics, but fortunately those temptations had been resisted. The magic of his tongue had always been at the disposal of those with a righteous cause, and his last effort, his appeal for the Cancer Research Fund, which had resulted in raising the magnificent sum of £130,000, had been marvellous. Some great men engrossed in their work seemed to be devoid of humanity, but as Sir Berkeley Moynihan had grown as a surgeon he had also progressed as a man. Dr. A. Hawkyard said that no one citizen of Leeds had ever made the city so famous as had Sir Berkeley Moynihan. Apart from his eminence as a surgeon he was one of the first six orators in this country. Sir Berkeley Moynihan, in reply, said that however diverse the roads travelled, the goal reached at the end was very likely to be the same. In his cradle he had been dedicated to the Army, but he had chosen the perhaps less glorious but more remunerative path of saving life rather than of destroying it. Had he joined the Army, escaped death, and won distinction, he would have been made a Major-General in the very same month as this rank was actually conferred on him. In his student days nothing was less conceivable than that a student of the Leeds School of Medicine—perhaps the humblest and poorest student in the school—should have been the first surgeon outside London to be made President of the Royal College of Surgeons. He felt that he owed everything to Jessop and McGill. He thought he cause of surgery was advanced by men who served it rather differently. There were, in the first place, the men of genius, of great original creative minds, who made the great generalisations, who had the force to put ideas in motion. Then there were those who could capture the new idea almost at the moment of its birth, and make it marketable in all the countries of the world; they were the apostles of the new faith. And then there were the men who kept the thing going. They had perhaps no great gifts except the gifts of the craftsman; on the stage of surgery they were rather actors than authors. The pre-eminence of Leeds in surgery—for there was a pre-eminence of Leeds in surgery—had been due to the fact that it had produced one or two men entitled to be placed in the first category—Spencer Wells, William Hey, and, he almost thought, Mayo Robson, who was the incomparable surgeon of his time; it had produced many men of the second category and comparatively few of the third. Leeds had taken its place as a school of surgery second to none. Sir Berkeley Moynihan went on to speak of the reciprocity between surgeons in the North of England and of the *Journal of Surgery*. There were those who said that the generation just coming to an end had had great luck. So they had, and they had done the best they could with it. He thought the Listerian epoch was over; but he thought the future incalculably brighter than the past had been. Surgery was now the safe weapon for research and if that were true, how was surgery to advance? It could only advance by going back to the beginning of things again, by harking back to biology in its broadest sense, by going hand-in-hand with physicists, biochemists, chemists, and physiologists. In conclusion, Sir Berkeley Moynihan said that their tribute to him had touched him deeply as a tribute to something he valued much more—to the great tradition that Leeds had set up a century and a half ago and had never allowed to weaken since.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—The Fellowship has arranged the following special courses for January. From Jan. 10th to 22nd the Prince of Wales's General Hospital, Tottenham, will hold an intensive course in medicine, surgery, and the specialties. The daily sessions will last from 10.30 A.M. to 5.30 P.M. On Jan. 10th a two weeks' combined course in diseases of children will begin at the Royal Free Hospital and the Children's Clinic. From Jan. 11th to Feb. 5th there will be a series of lecture-demonstrations on psychological medicine on Tuesdays and Saturdays at 11 A.M. at the Bethlem Royal Hospital. From Jan. 17th to 29th an intensive course in cardiology will be held at the National Hospital for Diseases of the Heart. As entry to this course is limited to 20, early application is desirable. Courses in obstetrics, lasting two weeks or a month, can be arranged at the Queen Charlotte's Hospital. Every week the City of London Maternity Hospital holds a course in obstetrics and child welfare, personal application for which must be made to the office of the Fellowship, which can also arrange for clinical assistantships at the Samaritan Hospital. The series of lectures on Emergencies in Medicine and Surgery will begin again on Jan. 27th. Demonstrations in clinical surgery and ophthalmology will also be resumed in January. Syllabuses of the special courses and copies of the programme of the general course and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship, at 1, Wimpole-street, London, W. 1.

BRITISH MEDICAL ASSOCIATION.—At 8 P.M. on Monday, Jan. 24th, 1927, Sir Berkeley Moynihan will deliver the Hastings Lecture in the Great Hall of the British Medical Association. His subject will be Cancer and How to Fight It, and Mr. Neville Chamberlain, Minister of Health, will take the chair. Admission will be free by tickets obtainable on application to the Financial Secretary, B.M.A. House, Tavistock-square, London, W.C. 1.

IRISH FREE STATE AND THE MEDICAL REGISTER.—President Cosgrave made a brief announcement in the Dail last week dealing with the question of the Medical Register. He said that it might be necessary before the Christmas adjournment to give notice of the extension of the Medical Act for three months. Nevertheless, it might not be necessary to take the full three months, as agreement was practically achieved, and they were now working out details.

NEW DEWSBURY INFIRMARY. — Dewsbury and District Infirmary, which serves a large area, is no longer adequate to the demands upon it, and it has been decided to erect a new building on an eminence overlooking the town. The cost is estimated at £90,000, of which one-half is in hand. The existing hospital has 60 beds ; the new one will contain 101, but the plans provide for future extensions up to 150 beds. There will be a nurses' home to accommodate 50 members of the nursing staff.

ROYAL NORTHERN HOSPITAL.—It is announced that series of post-graduate courses are to be held at the Royal Northern Hospital, Holloway-road, London, N.7, beginning on Tuesday, Jan. 4th, 1927, and continuing throughout the year except during the months July, August, and September. Two sets of courses will be held : the first will be open to all practitioners, free of charge, and will consist of (1) weekly lectures or demonstrations on Tuesdays at 3.15 P.M., and (2) intensive courses, lasting one week, to be held in February, May, and October. The second course, on Recent Advances in Medicine, is designed for practitioners preparing for higher medical examinations. This will be held three times a year, the first being arranged for next March, and a fee of 5 guineas will be charged. Full particulars of these courses may be had from the Dean of the Hospital, Dr. E. G. B. Calvert.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.

MONDAY, Dec. 20th.—10 A.M., Mr. Macdonald : Genito-Urinary Operations. 12 noon, Mr. Simmonds : Fractures and Applied Anatomy. 2 P.M., Dr. Scott Pinchin : Medical Out-patients.

TUESDAY.—12 noon, Dr. Burrell : Demonstrations of Chest Cases. 2 P.M., Mr. Addison : Operations. 2 P.M., Mr. Sinclair : Surgical Out-patients.

WEDNESDAY.—10.30 A.M., Dr. Burnford : Medical Wards. 2.30 P.M., Mr. Donald Armour : Surgical Wards. 2 P.M., Dr. Owen : Medical Out-patients.

THURSDAY.—10 A.M., Dr. Grainger Stewart : Neurological Dept. 2 P.M., Mr. Simmonds : Surgical Out-patients. 2 P.M., Mr. Bishop Harman : Eye Dept.

FRIDAY.—10 A.M., Sir Henry Simson : Gynæcological Operations. 10.30 A.M., Dr. Dowling : Skin Dept. 2 P.M., Mr. Vlasto : Throat, Nose and Ear Dept.

Operations, Medical and Surgical Out-patients, Special Departments, daily, 10 A.M. to 5 P.M. Saturdays, 10 A.M. to 1 P.M.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY, Dec. 20th.—10 A.M., Surgical Clinic. 2 P.M., Medical Cases in the Wards. 2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.

TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.

WEDNESDAY.—2.30 P.M. to 5 P.M., Medical, Skin, and Eye Clinics. Operations.

THURSDAY.—11.30 A.M., Dental Clinic. 2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose, and Throat Clinics. Operations.

FRIDAY.—10.30 A.M., Throat, Nose, and Ear Clinics. 2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY, Dec. 21st.—5 P.M., Dr. A. C. Roxburgh : Urticaria.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

WEDNESDAY, Dec. 22nd.—1.45 P.M : Dr. Norman Mackeith : Hearing Tests.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.

TUESDAY, Dec. 21st.—4 P.M., Major Walter Elliot, M.P., Under Secretary of Health : Clinical Research in its Relation to the Public Health Services. Discussion to be opened by Dr. G. Matthew Fyfe.

Appointments.

DAWSON, WILLIAM S., M.D. Oxf., M.R.C.P. Lond., has been appointed Professor of Psychiatry in the University of Sydney, New South Wales.

HALLCHURCH, W., M.B., Ch.B. Edin., Hon. Medical Officer in Charge of the new Ear, Nose, and Throat Department of the Dudley Guest Hospital, Wolverhampton.

HARRIS, W. H., M.B., Ch.B. Aberd., Assistant Medical Officer of Health for Aberdeen.

Certifying Surgeons under the Factory and Workshop Acts : NEWTON, E., M.R.C.S., L.R.C.P. Lond., D.P.H. (Tilbury) ; MERCER, E. B., M.B., Ch.B. Edin. (Littlebourne, Kent).

Vacancies.

For further information refer to the advertisement columns.

Bedford County Hospital.—Asst. H.S. At rate of £130.

Birkenhead Borough Hospital.—Hon. Radiologist.

Birmingham, Queen's Hospital.—Cas. Surg.

Bury Infirmary.—Second and Third H.S.'s. At rate of £175 and £150 respectively.

Calcutta Corporation.—Health Officer. Rs.1500 per mensem.

Cardiff, University College of South Wales.—Prof. of Anatomy. £1000.

Charing Cross Hospital.—Med. Registrar. £150.

Dagenham Urban District Council.—M.O.H. and Asst. County M.O. £550 and £250 respectively.

Glasgow, Govan District Asylum, Halfwayhouses.—Third Asst. M.O. £275.

Greenwich Metropolitan Borough.—Obstet. Consultants. 3 to 5 guineas per consultation.

Hammersmith, School Treatment Centre, 10, Mall-road, W.—M.O.

Lancaster County Mental Hospital.—Temp. Asst. M.O. 7 guineas weekly.

London Hospital, E.—Vacancy on Hon. Medical Staff.

London Temperance Hospital, Hampstead-road, N.W.—H.P. At rate of £100.

Middlesbrough County Borough Mental Hospital.—Asst. M.O. &c. £550.

Newcastle-upon-Tyne, Princess Mary Maternity Hospital.—Asst. Res. M.O. At rate of £40.

Oxford, Radcliffe Infirmary and County Hospital.—H.S. and Obstet. H.P. Each at rate of £120.

Prince of Wales's General Hospital, Tottenham, N.—Hon. Asst. Radiologist, Physio-Therapeutist. Also Hon. Assts. S.

Reading, Royal Berkshire Hospital.—H.P. and Third H.S. Each at rate of £150.

Rochdale Infirmary and Dispensary.—Jun. H.S. £200.

Royal Army Medical Corps.—Commissions.

Royal London Ophthalmic Hospital, City-road, E.C.—Seven Refraction Assts. £100.

St. Mary Abbots Hospital.—Res. Phys.

St. Marylebone General Dispensary, 30, Marylebone-lane, W.—Hon. Phys.

St. Mary's Hospital, W.—Med. Registrar. £200.

St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—Clin. Assts.

Sheffield, Jessop Hospital for Women.—Asst. H.S. At rate of £1000.

Sheffield Royal Infirmary.—H.S. At rate of £80.

Sheffield University.—Dept. of Pharmacology, Research Asst. £600.

Sutton, Surrey, Downs Hospital for Children.—Asst. M.O. £550.

Ventnor, Isle of Wight, Royal National Hospital for Consumption and Diseases of Chest.—Jun. Res. M.O. At rate of £300.

West London Hospital, Hammersmith, W.—Hon. S. to Throat, Nose, and Ear Dept. Also Hon. Obstet. Reg.

Worcestershire County Council.—Asst. County M.O. £600.

The Secretary of State for the Home Department gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act for the districts of the Denbigh and Ruthin, and Rhyl County Courts. Applications should reach the Private Secretary, Home Office, not later than Jan. 3rd next year.

Births, Marriages, and Deaths.

BIRTHS.

ATKINSON.—On Dec. 2nd, at Stainer-street, S.E., the wife of Dr. C. Hewitt Atkinson, of a daughter.

DANDO.—On Dec. 8th, at Queen's Club-terrace, Kensington, W., the wife of Dr. Dando, of a daughter.

SATOW.—On Dec. 9th, in Oxford, to Margaret, the wife of Lawrence L. Satow, *M.C.*, M.R.C.S.—a son.

SMITH.—On Dec. 10th, at Idrisyn, Hodford-road, Golders Green, the wife of A. Francis Smith, L.D.S., of a daughter.

DEATHS.

JARDINE.—On Dec. 7th, at Richmond, Surrey, James Jardine, M.B., C.M. Edin., in his 81st year.

NOEL-COX.—On Dec. 6th, at Clifton-gardens, W., Herbert Lovis Noel-Cox, M.D., F.R.A.S.

RISK.—On Dec. 7th, of heart failure, at Collingham-place, S.W., Colonel E. J. Erskine Risk, A.M.S. (retd.).

WARE.—On Dec. 5th, in London, Sydney Arthur Thomas Ware, M.B., B.S., of the Sudan Medical Service, aged 32 years.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

OCCUPATION AND HEALTH.

A FURTHER part of "Occupation and Health, an Encyclopædia of Hygiene, Pathology, and Social Welfare," published by the International Labour Office, Geneva, has just been issued. It contains brochures 36 to 45. This encyclopædia is being published in rather a novel way; each part contains such articles as are completed without waiting for the whole to be ready. Consecutive pagination finally will not be possible, but each article will be able to be arranged alphabetically for binding. The international character of this work is maintained in the present collection of brochures which are contributed by Dr. L. Carozzi (Geneva), Prof. A. Sclavo (Sienna), Prof. D. Ottolenghi (Bologna), and Dr. Brezina (Vienna). The article on anthrax is excellent and the statistics given show how the disease only occurs by infection from animals; in Great Britain the woollen industry has been the main source of cases with the handling of hides and skins second; in France hides and skins stand first, wool second; while in Germany hides and skins are first and wool is of little moment. Animal vaccination is well explained, and the early use of serum in all suspected cases is insisted upon; here the author, Prof. Sclavo, modestly says nothing of the part he has played in developing this line of treatment. The articles dealing with the soap industry, with picric acid, and with ammonia are good examples of accurate condensation. This publication is being issued simultaneously in French and English, and the translations, judging by the English text, are well done.

CALENDARS AND DIARIES FOR 1927.

A CONVENIENT block calendar for 1927 (the A.F.D. Diary) has been issued by the Anglo-French Drug Co (238A, Gray's Inn-road, London, W.C.). There is provided for each day throughout the year a sheet of white paper, 4 inches square, for written memoranda, and the stiff, hinged cover provided preserves the privacy of the notes and lends the calendar the appearance of a bound book. This year the cover is brown instead of black. A certain number are available gratis to medical men on application to the company.

A NEW JOURNAL OF ABSTRACTS.

THE *Revue Médicale* is a weekly journal in French, edited and published in Brussels, the purpose of which is to abstract the principal medical papers and books of all countries as soon as possible after they appear. Judging from Nos. 15 and 16, the matter selected for abstraction is mostly French and Belgian, but there is a sprinkling of German and English, and the scope will doubtless widen as the number of pages increases. The size of the review is about 6 in. by 9 in., and every page is perforated so that it may be easily removed for filing in a special index cabinet which the proprietors supply to subscribers. The price of this review is 40 francs a year, post free, and subscriptions may be sent to Compte chèque postal, *Revue Médicale* No. 413, 90, Brussels.

AN INFORMATIVE CATALOGUE.

THE second edition of Messrs. Ogilvy and Co.'s catalogue of microscopical illuminating apparatus should be of interest to pathologists who require standardised conditions of illumination for microscope work. The Hartridge-Williams axial illuminator, an entirely British production, is illustrated and described in detail and appears to combine all the essentials for constant and efficient lighting with a minimum of eyestrain. Axial illumination, by eliminating the variable factor of reflection, allows the observer to make any number of examinations under identical conditions. The Silverman illuminator for the microscopy of opaque surfaces, the K.B.B. lamp for work with monochromatic or ultra-violet light, and all the well-known forms of bench light are illustrated.

AN APPOINTMENT BOOK FOR DENTISTS.[1]

A HANDY appointment book, specially devised for dentists, is arranged for half-hourly appointments throughout the day. An indexed address book which slips into a pocket in the cover is a useful feature. The dangerous drugs register in the prescribed form, included as a separate booklet, is a timely reminder, in view of a recent prosecution, that dentists are affected by the legislation on this point. Most dentists keep cocaine in some form for local use, but many do not realise that all purchases of cocaine must be entered in a special book.

[1] Diary of Appointments, 1927, with Address Book. London Dental Manufacturing Co. 6*s*. 6*d*. Interleaved 8*s*. 6*d*.

THE COMPLETE WHITAKER.

Whitaker's Almanack for 1927 appears in two forms, of which the complete edition (pp. 896, green and red cloth, price 6*s*. as before) has been rearranged and contains some new features. Following the index is a convenient table of abbreviations in common use, including the various medical degrees and diplomas. Among the 57 short articles appearing under "Questions of the Day," towards the end of the volume, are handy summaries of the proposed factory legislation, of Sir George Newman's report to the Ministry of Health, and of the report of the Lunacy Commission. There is the customary paragraph on medical fees and charges, and a note—correct but all too brief—on the function of the General Medical Council, followed by a list of medical schools in London, with the names in each case of the medical secretary or dean. Under "English Counties and Shires" appears a scheduled list of sheriffs, clerks of the peace, and chief constables, in which the medical officer of health occupies the place of easy reference in the last column. Apart from definitely medical items, the whole book is pregnant with exact information indispensable to medical men whose work brings them into contact with public bodies and institutions. The index is so complete as to make cross-reference simple and easy. The abridged edition (pp. 240, paper cover, price 1*s*. 6*d*.) is a new book which contains as many index entries as any previous Almanack, but which has been shorn of details, although it still contains "Questions of the Day," the parliamentary summary, and the events of the preceding year. The Abridged Whitaker is small enough to be carried in the pocket.

ULSTER MEDICAL SOCIETY.

THE annual dinner of this society was held at Belfast on Dec. 9th, Dr. M. J. Nolan, the President, in the chair. Amongst the guests were the Duke of Abercorn (Governor of Northern Ireland), Sir William Turner (Lord Mayor of Belfast), Judge Thompson (Recorder of Belfast), Dr. R. W. Livingstone (Vice-Chancellor of Queen's University), Viscount Bangor, and Sir Frederick Moneypenny. After the loyal toast had been honoured, the President gave the toast of "His Grace the Governor, and Prosperity to Ireland," and the Duke of Abercorn responded. Mr. James A. Craig submitted the toast of "The City of Belfast," and the Lord Mayor responded. Dr. R. W. Leslie proposed "Our Guests," and the Recorder, the Vice-Chancellor of Queen's University, and Viscount Bangor responded. Mr. C. G. Crymble proposed the toast of the Royal College of Surgeons in Ireland, and Mr. Andrew Fullerton, who is a member of the Society, responded. Prof. J. A. Lindsay proposed the toast of The President, and Dr. Nolan responded. Subjects of importance referred to in the speeches included the need for a hostel for men students at the University, the deficiency in maternity accommodation in Belfast, and desirability of reform of the Lunacy Laws. The proceedings concluded with the singing of the National Anthem.

AN ANCIENT EGYPTIAN COSMETIC.

AMONG Mr. Howard Carter's finds in the tomb of Tut-Ankh-Amen at Luxor was a sealed calcite jar containing a cosmetic. The jar had been sealed naturally by the crystallisation of certain salts and had remained in a sterile atmosphere for more than 3000 years; when it was opened it was found to contain about a pound of fatty matter, of the colour of chocolate, and containing yellow nodules. It melted with the heat of the hand, and its smell was described by various observers as something like that of coconut, broom, or valerian. Mr. A. Chaston Chapman, F.R.S., and Mr. H. J. Plenderleith, of the British Museum Laboratory, communicated an account of its analysis to the *Journal of the Chemical Society* for October last. The results do not allow them to say what the fat was that formed 90 per cent. of the whole, but since the chemical evidence excluded coconut or palm-kernel oils, and it is improbable that any vegetable fat with such a small amount of olein as this specimen contained would have been available, it was probably animal fat. The remaining 10 per cent. was composed of some resin or balsam. The smell was probably one of the results of oxidation in this resin, as the odoriferous constituents of coconut are, as far as is known, not stable enough to survive the action of oxygen and moisture over so long a period.

ROYAL SOCIETY OF MEDICINE.—The Society's house and library will be closed from Thursday, Dec. 23rd, to Tuesday, Dec. 28th, both days inclusive.

UNIVERSITY OF SYDNEY.—The Agent-General for New South Wales announces that Dr. W. S. Dawson, of the Maudsley Hospital (London County Council), has been appointed professor of psychiatry. Mr. Horace Finnemore, B.Sc., of Guy's Hospital Medical School, has been appointed lecturer in pharmacy.

Some Notes ON ADOLESCENT ALBUMINURIA: INCIDENCE, SIGNIFICANCE, AND AFTER-HISTORY.

BY H. H. BASHFORD, M.D., B.S. LOND.,
ASSISTANT MEDICAL OFFICER, GENERAL POST OFFICE.

THERE is now a very general recognition that the mere presence of albumin in the urine of adolescents and young adults need not be regarded so gravely as was once the case, provided that it is unaccompanied by any other signs of renal or constitutional disability.

At the time, however, that the present investigation was begun, in 1909, this condition was still looked upon with much suspicion, and was in itself sufficient to debar many otherwise healthy-seeming candidates from various pensionable services, including the Army and Navy, while most insurance societies "loaded" such applicants, if they did not refuse them altogether. Since then a considerable amount of work has been done on the subject, particularly amongst schoolboys, army recruits, and athletes; and the regular occurrence, during systematic series of examinations, of apparently healthy individuals, whose urine, especially after exercise, contains albumin, has led to the prima facie assumption that it cannot be of very serious import. Various theories have also been advanced as to the probable cause of the phenomenon, which has been stated to be associated chiefly with boys and youths of a weedy, neurotic type; to be due to vasomotor instability, as evidenced in a history of faints on parade, in church, and so on; to be the result of pressure on renal vessels by lordosis; to be due to irritation caused by oxalate crystals; and, more recently, to betoken an unnoticed or mis-diagnosed attack of scarlet fever.

With its exact histological or physiological explanation I have not been concerned in the following inquiry—I am only aware, though probably others have been recorded, of one case in which post-mortem attention was paid to the fact, the patient dying from a glioma and the kidneys being found healthy—but these various theories have been borne in mind during the investigation, which has been chiefly directed to obtaining some idea of its exact incidence, its persistence or otherwise in later life, and its significance in respect of general physical efficiency.

INCIDENCE.

With regard to its incidence, in a consecutive series of 1000 examinations of boys of 14 years of age, examined by the Headquarters Medical Department of the General Post Office between July, 1924, and April, 1926, 58 were found to have albumin in their urine. Of these 58 boys the lightest weighed just 5 st. and the heaviest exactly 10 st. In one case there was found an associated mitral lesion. But the others, who were of every type and build, were found to be organically sound and healthy, although 14 of them were unsuitable for the particular purpose for which they were being examined on account of minor defects, such as flat-feet or defective vision. The urine of these 14 boys was not again examined. But of the remaining 43, albumin was found to be absent from the morning or after-rest specimen in 40 of them.

In a second group of 500 consecutive cases of males between the ages of 14 and 30, examined in all parts of England, but referred to headquarters on account of some abnormality found, albuminuria, without any apparent organic disease, was present in 41 of them. Five of these cases were of men over 25, and in only 3 of the 41 cases was there a previous history of scarlet fever. Of these 41 cases, further examination showed the albumin to have disappeared from the morning or after-rest specimen in 30 of them.

RELATION TO PHYSICAL EFFICIENCY AND SICK RECORD IN LATER LIFE.

The main object, however, of the present investigation has been to trace the effect, if any, in after life of this variously called functional, postural, or adolescent albuminuria upon the physical efficiency and sick record of the individuals concerned. To have been able to do so, I am primarily indebted to the late chief medical officer of the General Post Office, Dr. John Sinclair, C.B.E., and his predecessor, Dr. A. H. Wilson. Both these observers, after a very wide experience amongst adolescents and young adults, had for some years, and to a certain extent in advance of general contemporary medical opinion, came to the conclusion that the condition was not such as should, in itself, debar candidates from acceptance on medical grounds. By the year 1909, therefore, when this inquiry was begun, there was a considerable number of such cases at hand, and having traced the first consecutive 30, of which the records were available, I was enabled to re-examine them after periods of service varying from seven to 14 years. All of them were men without exception in good health, their sick records being mostly of a trivial nature. None of them exhibited the lordosis that had been put forward as a possible explanation of the condition. Only five of them were marked down as being of a nervous type. Only two of them remembered fainting. There was a history of scarlet fever in only one case. And in only one case were oxalates found to any noticeable extent. With regard to the condition itself, I found albumin still present in the urine of six out of the 30, the morning or after-rest specimen being clear in five out of these six cases. It is interesting to note that this latter case died seven years later with acute nephritis, whether as a last stage of a gradual process indicated by the albuminuria found—it was discovered at the age of 19 and he died at 35—or whether, in legal phraseology, as a *novus actus interveniens*, I am not prepared to say, though I suspect the latter.

With the exception of this case and five others, I have been able to examine the whole group again in 1926—i.e., another 17 years later—and possibly the following table of results may be of some general interest.

From the table it will be seen that of the six cases I have been unable to re-examine a second time, in two instances it has been due to the fact that I have been unable, for various reasons, to trace them. Of the remaining four, reference has been made to one, and the other three left the service, one with cyclitis and eye trouble, one as the result of acquired syphilis, and one as the result of a gastric ulcer. In none of these cases, I think, can there be any legitimate inference that their albuminuria had anything to do with it. Of the remaining 24, all are in good average health, and most of them with good sick records, while such illnesses as they have had have no apparent association with renal causes, No. 19 being the only possible exception. It will be seen that in the second re-examination the condition was found to be persisting in only one of the group—namely, in a member who was free on the previous re-examination, his morning or after-rest specimen containing no albumin.

With regard to this latter point, it is certainly the case, almost to the point, perhaps, of being characteristic of the condition, that albumin is usually absent from the urine after a period of sleep or the usual night's rest. And this morning freedom is very generally, from the point of view of medical policy in advising upon such cases, taken to be a rough practical guide; and cases in which albumin is consistently found in the after-rest specimen ought certainly, in my opinion, to be regarded more stringently.

Again, as regards the persistence of the condition into later life, the above group shows a marked diminution as life goes on. But I have a strong suspicion that, were it practicable to make rather more regular and frequent examinations, the persistence of

ANALYSIS OF THE AFTER-HISTORY OF THIRTY CONSECUTIVE CASES OF ADOLESCENT ALBUMINURIA.

—	Employment.	Age at which alb. found.	Age at first re-exam.	General appearance, history, &c., at first re-exam.	Urine.	B.P. (arteries healthy in each case).	Age at second re-exam.	Second re-exam.	Urine.	B.P. and arteries.*	Av. sick absence in days per yr. of service.	Remarks.
1	P	18	28	Healthy; spare; no faints; no lordosis; not nervous type; no history scarlet fever.	No alb.; no casts.	120 m.	46	Healthy; spare; active; cy.	No alb.	130 m.	5·1	A.S.R. for 21 yrs., excluding 4 yrs. in Army; illnesses trivial.
2	P	18	26	Healthy; robust; no faints; no lordosis; no history S.F.; not nervous type.	Large trace of alb.; none after rest; no casts.	140 m.	43	Healthy.	„	130 m.	17·7	A.S.R. for 18 yrs.; 144 days for fractured ankle.
3	P	20	31	Healthy; spare; no faints; no lordosis; no history S.F.; not nervous; athlete.	No alb.; hyaline casts; oxalates.	115 m.	47	Healthy; active; motor-cy.	„	125 m.	6·2	A.S.R. for 24 yrs.; illnesses trivial.
4	P	22	31	Healthy; spare; no fts.; no ls.; not nervous.	No alb.; no casts.	140 m.	NR	—	—	—	—	Had gastric ulcer and left service at age 42.
5	S	19	30	Healthy; spare; no fts.; no ls.; no hist. S.F.; not nervous.	„	120 m.	47	Healthy; active.	No alb.	125 m.	1	A.S.R. 22 yrs., excluding 4 yrs. in Army; practically no illness.
6	P	19	26	Healthy; small; spare; no faints; not nervous; no ls.; S.F. age 9.	„	115 m.	43	Healthy; fit; athletic.	„	135 m.	5·1	A.S.R. for 24 yrs.; illnesses trivial.
7	P	18	25	Fine physique; 6 ft. tall, 13½ st.; fainted on parade as boy and one since; no lordosis.	Large trace of alb.; none after rest; no casts.	140 m.	NR	—	—	—	—	Acquired syphilis and left service at age 30.
8	P	20	27	Healthy; robust; one faint as a boy; nervous type; no lordosis; no history S.F.	Slight trace of alb.; none after rest; no casts.	145 m.	44	Robust; rather nervous.	No alb.	125 m.	10·1	A.S.R. for 22 yrs.; has had tachycardia; no morbus cordis.
9	P	19	29	Healthy; plump; no faints; no lordosis; not nervous; no hist. S.F.	No alb.; no casts.	150 m.	45	Healthy; stout; active.	„	140 m.	2·2	A.S.R. for 27 yrs.; illnesses trivial.
10	S	18	29	Healthy; spare; no faints; no lordosis; no history S.F.; nervous.	Tr. alb.; none after rest; no casts.	110 m.	46	Wiry; active.	„	125 m.	2	A.S.R. for 23 yrs.; illnesses trivial.
11	B	26	37	Healthy; spare; no faints; no lordosis; not nervous; no history S.F.	No alb.; no casts.	110 m.	54	Healthy; spare; active.	„	145 m.	1·9	A.S.R. for 22 yrs.; illnesses trivial.
12	S	18	25	Healthy; robust; no faints; no lordosis; not nervous; no history S.F.	Slight tr. alb.; none after rest; no casts.	130 m.	42	Healthy; active; cr.; cy.	„	125 m.	1·8	A.S.R. 22 yrs., excluding 2 yrs. in Army; illnesses trivial.
13	S	18	28	„ „	No alb.; no casts.	140 m.	45	Healthy; robust; active.	„	142 m.	6·8	A.S.R. 18 yrs., excluding 2 yrs. in Army; no serious illnesses.
14	P	18	26	Healthy; spare; no fts.; no ls.; nervous.	„	130 m.	NR	—	—	—	—	Records not traced.
15	T	18	27	Healthy; spare; no faints; no lordosis; not nervous; no history S.F.	„	130 m.	45	Healthy; spare; active.	No alb.	130 m.	5·4	A.S.R. 22 yrs., excluding 2 yrs. in Army; no serious illnesses.
16	T	18	27	Healthy; robust; no faints; no lordosis; not nervous; no history S.F.	„	150 m.	44	Stout; muscular; active.	„	135 m.	14·8	A.S.R. 17 yrs., exclud. 4 yrs. Army; post-war neurasthenia.
17	T	16	26	„ „	„	125 m.	43	Healthy; active.	Trace of alb.; none after rest.	135 m.	0·8	A.S.R. 16 yrs., exclud. 4 yrs. Army; practically no illness.
18	T	18	32	„ „	„	150 m.	48	Healthy.	No alb.	140 m.	12·4	A.S.R. 21 yrs., exclud. 3 yrs. Army; post-war neurasthenia.
19	T	18	27	Healthy; spare; no faints; no lordosis; not nervous; no history S.F.	„	145 m.	44	Healthy; spare; active.	„	150 m.	2	A.S.R. for 21 yrs.; illnesses trivial.
20	S	19	29	Healthy; spare; no faints; no lordosis; nervous type.	Large tr. alb.; none after rest; no casts.	140 m.	46	Healthy; spare.	„	140 m.	14·4	A.S.R. for 26 yrs.; chronic appendicitis and neurasthenia.
21	T	18	28	Healthy; spare; no faints; no lordosis; not nervous; no history S.F.	No alb.; no casts.	120 m.	44	Healthy; active; t.p.	„	145 m.	8·4	A.S.R. 21 yrs.; otosclerosis and associated neurasthenia.
22	T	19	28	„ „	„	150 m.	44	Stout; ruddy.	„	135 m.	19·4	A.S.R. for 21 yrs.; very neurasthenic.
23	T	18	28	„ „	„	135 m.	44	Healthy; spare; active; cr.	„	145 m.	3·6	A.S.R. 22 yrs., excluding 4 yrs. in Army; illnesses trivial.
24	T	19	28	„ „	„	125 m.	45	Healthy; spare; active.	„	120 m.	8·2	A.S.R. for 25 yrs.; 90 days off at age 25 with rheumatic fever.
25	T	19	26	„ „	„	120 m.	43	Healthy; active; t.p.; cy.	„	130 m.	6	A.S.R. for 25 yrs.; no serious illnesses.
26	T	17	26	Healthy; robust; no faints; no lordosis; not nervous; no history S.F.	„	135 m.	43	Healthy; active; cy; s.w.	„	150 m.	6·3	A.S.R. for 26 yrs.; no serious illnesses.
27	T	18	28	Healthy; spare; no fts.; no ls.; not nervous.	„	120 m.	NR	—	—	—	—	Record not traced.
28	T	18	27	Healthy; robust; no faints; no lordosis; not nervous.	„	120 m.	„	—	—	—	—	Had cyclitis and photophobia and left service at age 38.
29	T	19	28	Healthy; robust; no fts.; no ls.; nervous.	Large trace of alb.†	140 m.	„	—	—	—	—	Died of acute nephritis at age 35.
30	S	19	28	Healthy; robust; no faints; no lordosis; not nervous; no history S.F.	No alb.; no casts.	140 m.	45	Healthy; active; athlete.	No alb.	125 m.	3·9	A.S.R. for 26 yrs. no serious illnesses.

P, postman; S, sorter; B, bagman; T, telegraphist; NR, not re-examined; fts., faints; ls., lordosis; cr., cricketer; cy., cyclist; t.p., tennis player; s.w., swimmer. A.S.R., accurate sick record.

*Arteries healthy and heart normal in each case re-examined, excepting Case 19, where the arteries showed some thickening and there was a mitral systolic murmur.

† Slight trace after rest; a few hyaline casts.

adolescent albuminuria would be found to be a good deal more common than is supposed, and to be the real explanation of a good many middle-aged albuminurics. In this connexion the following case, typical of several, which have also come under my notice, may be of some interest :—

P. H., a journalist and traveller, was discovered to have albuminuria at the age of 18, and, though he appeared to be otherwise healthy, was ordered by one or two specialists at the time to avoid hard exercise and undertake various modifications of diet, &c. Later, being an athlete, and feeling perfectly well, he grew tired of these restrictions, resumed his usual avocations, including Rugby football, at which he attained county status, and has since been, and is now, at the age of 46, an exceptionally healthy and active man, who has scarcely had a day's illness in his life. Periodical examinations have, however, for the last 28 years, almost invariably shown very large traces of albumin in his daily urine, though never in the after-rest specimen.

CONCLUSION.

In conclusion, I think it may be stated : 1. That about one in every 20 young male adolescents will be found to exhibit the condition. 2. That in a considerable number of instances the condition persists for many years, if not throughout life. 3. That its presence is consistent with the prospects of a perfectly normal life of physical efficiency. 4. That in the great majority of cases the after-rest specimen is usually free from albumin. 5. That it is not definitely associated with any particular type of youth or man, with a so-called " nervous " disposition, with lordosis, oxaluria, or a history of scarlet fever.

Finally, as a point of incidental interest, and perhaps for further investigation, the above group of adolescent albuminurics have produced between them 14 sons who have attained puberty, two of whom present the same condition as their fathers. The figures are too small for deductions. But the proportion is certainly, as it stands, markedly higher than the average.

I am indebted to the Chief Medical Officer of the General Post Office, Colonel H. V. Prynne, C.B.E., D.S.O., and to the Secretary for permission to publish the relative figures, and to Mr. F. G. Lamb, of the medical department, and the staff officers of the various sick absence duties in the Post Office for their kindly assistance.

PROGNOSIS IN RECTAL CANCER.*

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THIS is a most difficult subject, since there are so very many factors which affect the estimate we may make in any individual case, and it is obvious that only a very approximate estimate can be arrived at. The improvements in the treatment of rectal carcinoma during recent years have been very considerable, and it is very important that those who have to deal with such cases should have their knowledge brought up to date as to the possibilities of what can be achieved by the various methods of treatment in these very distressing cases.

The word " prognosis " does not lend itself to very easy definition. It means, I take it, a prophecy as to the future history of the patient ; more particularly what chances there are of the patient being cured of the disease from which he suffers, and what his chances of survival are without any treatment.

Factors in Prognosis.

There are three factors which have the very greatest importance in estimating prognosis. These are : age of the patient, the stage of the disease when first seen, and the position of the growth.

To deal first of all with the question of age. There is no doubt that carcinoma behaves very differently at different periods of life. In young people the tendency is for the disease to grow extremely rapidly and at an early age to spread to other tissues. One may say that in such patients the disease has a tendency to fulminate, whereas at the opposite end of life we find the disease extremely chronic and growing very slowly. I have seen patients as young as 8 with cancer of the rectum, but, fortunately, the disease is rare under the age of 40.

The prognosis as regards cure of a patient under 30 years of age suffering from cancer of the rectum is extremely bad ; in fact, I have no record of any patient treated for cancer of the rectum under 30 who has not died from prompt recurrence, no matter how drastic the operation, or other treatment, had been. I doubt, in fact, whether it is worth while operating at all on patients under 30 for cancer of the rectum. On the other hand, very old patients, say of 80 or more, may have a carcinoma for many years which grows so extremely slowly that it is doubtful whether it is worth while operating on it, even if this is possible. I know of one patient, now 85 years of age, who has had an epithelioma of the anus for 25 years, and to all intents and purposes the disease is behaving like a wart, although there is no doubt of the diagnosis, a microscopical examination of specimens having been made on three different occasions. It is thus obvious that age is a very important factor in estimating prognosis.

To turn now to the stage of the disease when first seen. This is probably the most important factor of all, and it is here that we have the greatest chance of improving our present statistics, as I shall be able to show presently. That is to say, that if the disease is diagnosed early and has not invaded surrounding tissues, the prognosis with operation is good, and gets progressively worse as the disease is found to have advanced.

Thirdly, we have the position of the growth. There are three main positions. An epithelioma of the anus, an adenocarcinoma of the rectum itself, and an adenocarcinoma of the rectosigmoidal junction. In a case of epithelioma the prognosis is good provided the diagnosis is made early. Fortunately this is usually the case, owing to the fact that the growth quickly draws attention to itself and can easily be seen. Growths in the rectum also have a good prognosis, provided they are detected early and suitably operated on. Growths at the rectosigmoidal junction have not such a good prognosis as in cases of the growths of the rectum. The reason for this is that they can only be removed by a much more serious operation, and that it is more difficult to remove the secondary glands and tissues in immediate contact with the growth. In other words, the growth cannot be so completely or satisfactorily removed as in cases of cancer of the rectum. Another factor that renders the prognosis less favourable is that such growths are less frequently detected until a late stage of the disease owing to the fact that they cannot be felt with the finger.

Prognosis in an Untreated Case.

Before we consider the results of treatment it may be as well to consider what the prognosis is in an untreated case. It is only by comparing the results of untreated cases with those that are treated that we can get a satisfactory idea of the amount of benefit that the treatment confers upon the patient.

The only really satisfactory figures bearing on this subject are those published by Prof. W. S. Lazarus-Barlow and Dr. J. H. Leeming.[1] These figures purport to show the natural duration of cancer at different ages taken from a large number of figures. The duration for cancer of the rectum at the commonest decennial period, which is 55–64, shows a mean duration of 21 months, which is a little under two years. Roughly, therefore, we may say that a patient with cancer of the rectum who is only treated on symptomatic lines

* Paper read at the Post-Graduate Hostel.

[1] Brit. Med. Jour., August 16th, 1924.

has a little under two years to live, calculated on the average of a large number of cases. There are, of course, extremes. Some growths may cause the death of a patient within a few months, while other patients may live for many years. Apart from the case already quoted of epithelioma of the anus, I know of one case where a patient with carcinoma of the rectum which was not operated upon remained in comparatively good health for seven years. Such cases are, however, rare.

Prognosis in Operated Cases.

To turn now to the prognosis in operated cases. I shall deal first with epithelioma of the anus and adenocarcinoma of the rectum proper. There is still rather a general belief that the prognosis in such cases is bad, and that although a few patients may be benefited by operation the majority die from early recurrence in spite of operation. I hope to show that this very pessimistic view is not justified in the light of modern statistics.

Cases of epithelioma and cancer of the rectum can, in these days, best be dealt with by what is known as the perineal operation with a permanent colostomy, and I propose first of all to give you these figures to show what may be achieved by this method of treatment. I have just recently completed a sequence of 200 cases operated upon by this method. These do not include cases of carcinoma of the recto-sigmoidal junction which have been dealt with by the abdominoperineal excision. The period covered by the series is, naturally, a long one, and although the mortality figures are calculated upon the whole 200 cases, the recurrence figures are only worked out upon those cases which were done more than five years ago, since the more recent ones are obviously not available. In discussing the prognosis we have to take into account the operative mortality, and I am glad to say that at last we have been able to reduce the operative risk in cases of cancer of the rectum to quite satisfactory figures. In my last 100 private cases there were only three deaths, which gives a 3 per cent. mortality. This, considering that we have to deal with patients up to about 76 years of age, often with concurrent disease, is probably as low as can be hoped for. The 100 hospital cases do not show quite such a low mortality. This is largely due to the fact that cases come up for treatment much later and that their general condition is not nearly so good as in the case of the richer classes. It is now my custom to keep all hospital patients at least a week in bed before any operation is performed, and this has already considerably reduced the mortality risk.

I have always maintained that no operation for cancer of the rectum is satisfactory unless it can deal with cases which from the surgeon's point of view are bad risks, as it is inevitable that in dealing with a disease like cancer many of the patients must be advanced in age and have other associated diseases. Thus in my 200 cases 72 patients were over the age of 60 and 14 over the age of 70. As regards associated disease, three patients had diabetes two Graves's, disease, one Hodgkin's disease, three diverticulitis, one woman had an aortic aneurysm, and one man had hæmophilia. Naturally every possible precaution was taken to get the patient into as good condition as possible before operation in these cases of associated disease. The diabetics were treated with insulin, and in all cases the anæsthetic of choice was gas and oxygen and spinal, or twilight sleep and local anæsthesia.

We may see, therefore, that as regards the mortality risk from cancer of the rectum where the case can be dealt with by a perineal resection the risk is not more than about 3 per cent. This figure, of course, is only arrived at by very careful management, the most important factors being the anæsthetic, designed so as to produce a shockless operation, doing the operation in two stages, the colostomy a week or ten days before the excision, and careful team-work on the part of everybody concerned. Both I and my assistant and nurses have had considerable experience with these cases, and it is only by great care that we have been able to get the mortality figure as low as 3 per cent.

The chief cause of mortality used to be sepsis. By careful technique this has been practically eliminated, and the main causes of mortality at the present time are post-operative infarct and heart failure. Pneumonia also accounted for two of the deaths in the hospital cases, and is a complication which is practically unavoidable in this climate where one has to deal with elderly patients who have to be kept in a recumbent position for some time.

In the case of growths at the rectosigmoidal junction which have to be dealt with by abdomino-perineal resection we have not been so successful in reducing the mortality. Considerable improvement has occurred, but it is doubtful whether with so serious an operation the mortality can be kept much below 25 per cent., and that only by eliminating a good many bad risks that would be easily dealt with by the perineal method. The operation is a much more severe one, and involves considerable interference with the abdominal cavity. Hence its much higher mortality.

Recurrence.

The most important factor in arriving at a satisfactory prognosis is the proportion of recurrences. Most surgeons have worked out recurrence rates on a three-year basis, but it has always been my opinion that this period is far too short, as cases that are not operated on at all not infrequently survive a three-year period. A five-year period is much more satisfactory, though still open to the objection that recurrence may occur after five years. The enormous difficulty in keeping in touch with a large number of patients over periods greater than five years, and the fact that a considerable number will die of other causes, renders it impossible to take anything more than a five-year period. The following figures, therefore, have been worked out on this basis.

There were in all 95 cases operated on five years ago or over. These work out as follows :—

Cures on a five-year basis	45
Recurrences	37
Died from other causes	6
Untraced	7
Total	95

If we subtract the untraced cases and those that died from other causes it gives us a percentage of cures of 54·8. If instead of subtracting these cases we divide them into their probable recurrence rate, which on the average of the remaining cases would be about 50 per cent., we get a percentage cure of 53·6. It seems probable from these figures that we can, therefore, disregard the cases that died from other causes or that are untraced.

If we take a three-year basis instead of a five-year there are 125 cases with cures, 73; recurrences, 42; or a percentage cure of 55·5.

If we examine the figures in a little more detail several interesting points emerge. All the cases were originally divided into three classes: (A) very favourable cases where the growth was small and had not invaded the muscular coat and no glands were involved; (B) cases where the muscular coat was involved, but where the growth was not unduly fixed and there was not extensive involvement of glands; (C) bad borderline cases, with a large, fixed growth and evidence of extensive involvement of glands. Out of a total of 200 cases 73 were A cases, 96 were B cases, and 31 were C cases. An analysis of these three classes as regards recurrence shows very interesting results. The percentage of cures in the A cases on a five-year basis was 73·7, in the B cases 44·8, and in the C cases 44·4. This shows that with favourable cases where the growth is operated upon at an early stage the chances of permanent cure on a five-year basis is nearly 3 to 1. The figures in the C cases are, doubtless, misleading, since they are probably too few, but one very important point is demonstrated—namely

that such cases are well worth operating upon. Most of these cases were so bad that it was doubtful whether operation was advisable, and yet 44 per cent. survived a five-year period after operation, and one was alive over 18 years later.

I have made an attempt to trace the after-history of 39 of the cases who survived the five-year period, and the annexed table shows what happened to these patients :—

Table of 39 Cases Traced Beyond 5 Years showing the Number of Years that have Elapsed Since Operation.

Cases.	Years.	Cases.	Years.	Cases.	Years.
1	21	3	10	8	7
2	14	3	9	13	6
2	11	7	8		

Disability Produced by Operation.

When dealing with so serious and fatal a disease as cancer, disability after operation is a relatively unimportant factor. It becomes important, however, when comparing one method of treatment with another.

The disability which results from the perineal operation is entirely due to the presence of a permanent colostomy opening in place of the normal anus. This is, of course, also true of the abdomino-perineal operation. This disability is not a serious one—in fact, not nearly so serious as might well be imagined. Patients are able to live comfortable and useful lives, and after the first few months it is remarkable how little inconvenience the colostomy causes.

The best way, perhaps, to estimate the disability is in reference to the wage-earning capacity of hospital patients. We find that this is not diminished except in the case of very heavy labour involving strenuous exertion. The vast majority of patients were found to have been in the same employment as formerly. Thus out of 20 cases apparently cured by operation, six were women, five of whom did their housework, and one was a stationmaster's assistant. There were 14 men, of whom ten were in full work in the following occupations : printer's cutter, fish-curer, schoolmaster, packer, tailor, pilot, messenger, waiter, platelayer, and odd-job man. Three were living in retirement, being over 65 years of age, and one, who used to be a farm labourer, no longer works.

The figures show that when an operation is performed for cancer of the rectum under the most favourable conditions and the growth is diagnosed at an early stage, the prognosis as regards cure is good. The mortality is only 3 per cent. and the percentage of cures on a five-year basis in early growths is 73 per cent., while with the average of cases as they present themselves it is over 50 per cent. These results are, of course, only obtained by considerable experience in operations on the rectum and where the case is handled to a large extent by team-work.

Other Methods of Treatment.

As regards treatment by *deep X rays*. I cannot say that I have seen any cures from this method. Doses of X rays sufficiently powerful to destroy a growth in the rectum are decidedly dangerous, and I have seen one death from the rays. It has always seemed to me that there is a decided danger of stimulating parts of the growth which have not received a lethal dose to greater activity. At least I have thought that cases treated by rays in some instances died from extensive secondary growths more rapidly than I should have expected. At one time I was using X rays after operation as a means of preventing recurrence, but for some years now I have discontinued doing so. I have in a few cases seen good results from X rays in the treatment of epithelioma, and one case I believe to have been cured by this means. My opinion is that deep X rays as a means of curing cancer of the rectum are a failure.

With regard to *radium*. I know of no cure of a case of cancer of the rectum from the use of radium. The old method of applying radium tubes to the growth by means of applicators passed through a speculum into the bowel and retained there by means of a wire has proved quite useless, and, at any rate in my own practice, has been discarded. A much better method is that which I am now using of inserting radium needles into the base of the growth itself. The needles contain 10 mg. of radium bromide, or its equivalent in emanation, and from 10 to 12 needles are inserted for 24–36 hours. The actual method, of course, varies with the case to be treated. Roughly, it is as follows. An incision is made under an anæsthetic through the skin to enable the base of the growth to be reached without going through the rectal wall. If the growth is on the posterior wall the coccyx may be removed. The needles, with silk threads attached to them, are then passed by means of a special instrument deep into the base of the growth. The ideal arrangement is to have the needles in a fan shape with their points well beyond the limits of the growth and about ½ inch apart, so that the whole upper crescent of the growth will be affected. The threads are left hanging out and the wound stitched up. Next day—i.e., in 24–36 hours—the wound is opened and the radium needles removed, and the wound again closed. Naturally, great care is taken to avoid sepsis. To be effective the treatment should be repeated in from 4–6 weeks, the lower half of the growth being then similarly treated. I have not as yet had sufficient experience of the treatment to give you any results. I can only say that so far as they go the results appear to be much better than any that were secured by the old method. There does not seem to be any severe reaction, such as was often experienced formerly.

Colloidal Copper.—This treatment undoubtedly does good, and my experience of it must run now to over 200 cases. I have seen two cases which were apparently cured by this means. I say apparently because although in both an undoubted carcinoma of the rectum entirely disappeared after some 8–9 months of continuous treatment with colloidal copper, one cannot be sure when the proportion of cures is so small that the cure was due to the copper and not to some other fortuitous circumstance. Apart from these two cases I am quite certain that the treatment does a lot of good. I am convinced that it delays the growth of the tumour and reduces the secondary ulceration. It seems to act by tending to fibrose the growth. In practice it tends to prolong the patient's life and to increase his comfort and well-being. There is, so far as I know, no danger from the treatment.

The treatment with *Colloidal Lead* is on a different footing, as a considerably greater proportion of cures is claimed for this method of treatment. The lead acts by poisoning the tumour cells and so destroying their reproductive properties. This treatment is at present still in the experimental stage, but the results are very encouraging. Unfortunately, there is considerable danger attending the use of colloidal lead, both from the rapid reaction of the tumour itself and from acute plumbism from the direct effects of lead in the circulation.

SHROPSHIRE ORTHOPÆDIC HOSPITAL.—On Friday in last week the ex-King of Portugal opened a new ward at this hospital at Gobowen, near Oswestry.

INSURED PATIENTS IN HOSPITALS.—The Committee of Queen Mary's Hospital for the East End has asked the British Hospitals' Association to consider "the matter of charges in connexion with casualties where injured persons receive sums of money in compensation, so as to enable hospitals to recover their costs, and put a stop to insurance companies and private individuals gaining a profit at the expense of the hospitals." It is pointed out that although one insurance company has endowed a bed at different hospitals, most of the others fail to recognise responsibility when their insured are hurt. It is added that when injured persons in county court actions present an account of hospital costs the judges almost invariably refuse to take these costs into consideration on the ground that no fees are asked from patients.

CLOSED RENAL TUBERCULOSIS.

WITH A REPORT ON FIVE CASES.

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THE term closed is applied to those cases in which the tuberculous disease in the kidney is shut off from the rest of the urinary tract. The closure may occur by the encapsulation of a small focus in the kidney itself, or by the sealing-off of a calyx, the renal pelvis, or the ureter. It most commonly results from a combination of the last two processes.

The facts which have given special importance to this product of renal tuberculosis are, first of all, that the occlusion may result in the cure of the urinary tuberculosis, and, secondly, that the disease can develop and reach the stage of complete functional obliteration of the kidney before the presence of any disease of the urinary apparatus is suspected by the patient. Personal contact for the first time with such facts is likely to come as a surprise to the surgeon who rightly associates marked disturbances of micturition with renal tuberculosis, for more than 90 per cent. of cases give rise to dysuria and frequency.[1]

The condition first received prominence less than 40 years ago, when several cases were published within a short time.[2] In those days, however, as cystoscopy was only in its infancy, the diagnosis was often only made certain on the post-mortem table. In 1906 the most valuable contribution which has ever been published, dealing with the pathological anatomy of the condition, appeared under the combined authorship of Hallé and Motz.[3] These writers established its comparative frequence by finding that complete occlusion of the ureter occurred in 18 examples of the 100 specimens of renal tuberculosis which they investigated at the Musée de Necker. In the following year the subject was widely discussed at the congress of German urologists, when Zuckerkandl[4] introduced the descriptive designation of Pyonephrosis Tuberculosa Occlusa. Up to 1913 only a few cases had been reported, for Smirnow[5] at this time was only able to collect 24 from the literature.

Incidence.

Even up to the present day this form of renal tuberculosis is generally referred to as rare. The figures of Hallé and Motz, however, show that it is quite the reverse; while Braasch, in reviewing 621 cases which were operated upon for tuberculosis of the kidney at the Mayo clinic between 1900 and 1919, reports that renal occlusion occurs in about 10 per cent. of the cases of chronic renal tuberculosis. Finally, my own personal experience of five cases within a period of three years adds a less important but, nevertheless, an emphatic support to the view that the condition is not at all uncommon.

Age.—As renal tuberculosis has its most frequent incidence between the ages of 20 and 30 years, it is not surprising that occlusion, which represents a final stage of the disease, is found most commonly at a later period—namely, during the fourth and fifth decades. Cabot and Crabtree,[6] in reviewing 70 cases of renal tuberculosis, state that all their cases over 50 years, four in number, were represented by a calcareous kidney with autonephrectomy. It is by no means confined to the later periods of life, however, for two of my own cases were discovered at the ages of 19 and 20, while a number of those reported in the literature were also young adults.[7]

It must not be forgotten that renal tuberculosis in children, although often accompanied by tuberculosis in other parts of the body, is not infrequent. Barthez and Rilliat,[8] in 72 autopsies on children under 12 with active tuberculosis, found renal lesions due to the tubercle bacillus in 68 per cent. In adult cases, from whom no history of any urinary disturbance can be elicited, it is not possible to know at what age the disease commenced.

Because urinary tuberculosis is more common in men than in women, on account of the greater incidence of genital tuberculosis in the male sex, there is a corresponding predominance of closed renal tuberculosis in men. There is no greater incidence of the condition in one kidney than in the other.

Pathology.

In order to obtain a clear idea of the way in which the ureter may become occluded, it is necessary to consider the changes which take place in this structure as the disease in the kidney progresses. The ureter only shows tuberculous lesions as a result of similar lesions in the kidney above, for there is a complete lack of anatomical evidence that the ureter can be infected by an upward spread along its lumen from the bladder, and one has yet to hear of a specimen showing tuberculous lesions of the bladder and of one of the ureters with the corresponding kidney free from infection with the bacillus of Koch.

With the disease established in the kidney above, the main excretory duct and its tributaries soon become the seat of tuberculous lesions, simply as a result of contact of the bacilli in the urine with the lining mucosa. Discrete tubercles first form in the submucosa; these quickly give rise to superficial ulcers, which become confluent and may involve the whole tube in a superficial ulceration. The calyces and the pelvis generally suffer first, frequently the extra-vesical portion of the ureter is next, while the intervening portion becomes involved later; but this sequence is by no means constant.

The factors which determine the first and the last of the foregoing situations as the likely sites of the early lesions are: first, that there is a physiological delay of the urine in the renal pelvis and in the extra-vesical portion of the ureter; and, secondly, the rudimentary type of epithelium in the calyco-papillary angle offers an easy path of entry for the bacillus, and explains the readiness with which the infection at the upper end of the tract commences in this situation. In 100 specimens Hallé and Motz found the whole length of the ureter from kidney to bladder involved in 70, while in the remaining 30 the lesions were localised to either the vesical end or to the pelvis.

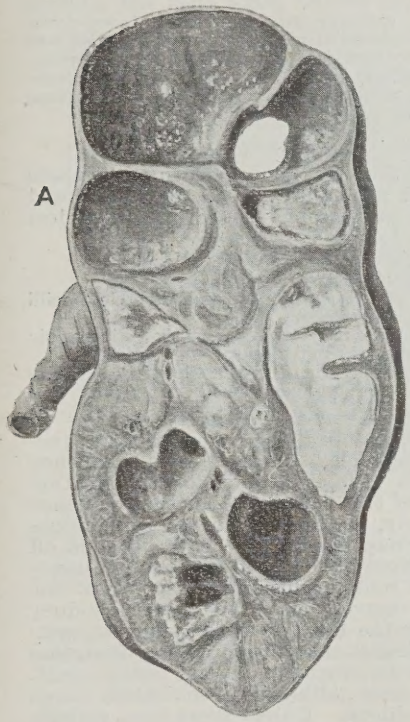
Infection of the bladder results from direct extension of the ulceration from the ureteric orifice, or this latter structure may be quite free, and the bladder may become infected by direct contact with tubercle bacilli carried in the urine from some focus higher up in the urinary tract. The bladder may, indeed, be free from infection altogether, and if the lower end of the ureter has also escaped, we have an explanation of those cases which remain without vesical symptoms throughout their course, even to the extent of complete destruction of the kidney. As a result of any chronic inflammatory process in the kidney, quite independently of tuberculous infection, the ureter undergoes a series of changes. First of all, this structure is dilated throughout its whole length, to be followed soon by thickening of the ureteral wall, resulting from a deposition of fibrous tissue in the mucous and submucous zones.

These phenomena of dilatation and thickening of the ureter are commonly seen as a result of *Bacillus coli* pyelitis and the chronic pyelitis which is generally seen with stone in the renal pelvis (see Fig. 1). The fibrous tissue in the wall of the ureter ultimately begins to contract so that, finally, dilatation may be replaced by stenosis. There is an essential difference between the stenosis which occurs in non-tuberculous and in tuberculous inflammation. In the latter the narrowing tends to be much more severe, on account of the actual ulceration which is present in the condition. It is this factor which, in giving rise to the destruction of the mucous membrane, causes the lumen to be finally occupied by scar tissue, and thus to be completely obliterated.

Once the tuberculous process has settled in the kidney, this organ will be eventually completely destroyed by the chronic ulceration, unless either death intervenes or the kidney is removed by surgical operation (see Fig. 1 C). For although cases have from time to time been reported with clinical data suggesting a cure, yet no specimen has ever been brought forward demonstrating that renal tuberculosis is capable of healing, short of complete destruction of the renal organ.

Three Specimens of Tuberculous Kidneys illustrating the Three Stages of Chronic Inflammatory Change in the Ureter.

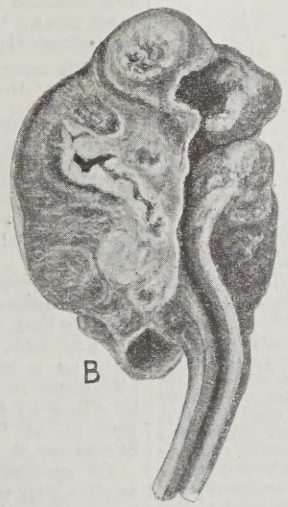
FIG. 1 A.—*Dilatation.*



(*Figs. 1 A and 1 B from the Museum of the Royal Free Hospital.*)

While the process continues in the kidney, provided there is no obstruction to the escape of the products of the necrosis down the ureter, so the ulceration in the walls of the latter structure will extend more and more deeply, until, ultimately, the whole mucosa and musculature may completely disappear. If such a stage is reached, the ureter consists of a rigid fibrous tissue tube of a diameter considerably beyond that of a normal ureter, and often strictured in places. This new formation develops in the periureteral zone in response to the peripherally spreading inflammation, so that the ureter itself has actually disappeared in spite of the presence of what appears to be an enlarged example of this structure. All operators experienced in urinary surgery are familiar with this type of ureter. If the disease in the kidney proceeds to the stage of complete destruction of all excreting renal tissue, localised and finally generalised contraction with obliteration of the ureteral lumen will be the result. At any time before this stage is reached the end of the kidney may be hastened by the blockage with caseous material of the pelvis, or the partly obstructed ureter; but what is least expected is that the occlusion is not dependent on deep and extensive ulceration of the ureteral wall. In the large majority the blockage occurs while the stage of ulceration in the ureter is still early; often with the greater part of the musculature yet intact, and with periureteritis slight or entirely absent. Hallé and Motz found this condition in 15 out of 18 examples of renal occlusion. The following is an abstract of their findings:—

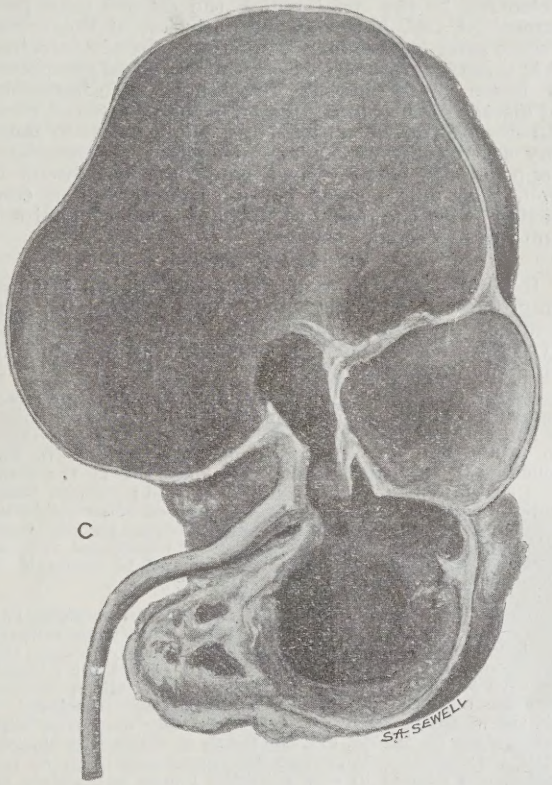
FIG. 1 B.—*Thickening.*



The ureter is only slightly, and often not at all, increased in size; sometimes it is even smaller than normal in the form of a solid cord. Its outer surface is consistently regular without periureteritis or excess of fat.

As a rule, this description applies to the ureter throughout its whole length, and the occlusion also involves the whole length of the tube. Sometimes a segment of varying length is alone obliterated and reduced to a solid cord, while, above and below, one finds the commonplace changes of tuberculous ureteritis. Both on naked eye and microscopic examination no lumen is discernible, as this is replaced by fibrous tissue, while a complete muscular coat with well-marked bundles is usually seen.

FIG. 1 C.—*Contraction.*



It is an obstruction to the outlet from the pelvis which seems to determine the healing and occlusion of the ureter, for the latter change is accompanied almost constantly by the obliteration of the pelvis and calyces. Hallé and Motz found this to be the case in all their specimens. In each of my own cases the lumen of the pelvis could be seen to be obliterated in one by caseous material; in another (Fig. 3) by scar tissue; and in a third by calcified caseous material.

It is this complete obstruction to the pelvic outlet which at one and the same time determines the rapid disintegration of all remaining renal tissue, if any still exists, while it provides circumstances favourable for the healing of the ureter by suppressing its conducting function and by cutting off the supply of further organisms from above. Evidence that the former plays a part is supplied by the knowledge that occlusion of the ureter down to its very orifice ultimately occurs after nephrectomy for kidney disease, other than tuberculosis, such as primary hydronephrosis. That the cutting-off of the supply of bacilli to the ureteral mucosa institutes the healing process in the ureter, as in the bladder, is borne out by the results of one's operative experience in dividing a tuberculous ureter in doing a nephrectomy, when, although it is obvious that the portion of ureter left behind is

tuberculous, yet the lumbar wound heals by first intention, while the vesical symptoms of the disease disappear.

Symptoms.

It must be clear that if the pelvic obstruction occurs while the ureteral ulceration is still in an early stage, and while no vesical ulceration has yet occurred, there is a considerable probability that no bladder symptoms have resulted either, and that the disease will now progress to its final stage without these arising; and unless there are features directing attention to the renal region the disease may pass unnoticed. If, however, the occlusion of the ureter occurs after the bladder has become already infected, it is usual in a unilateral case for the vesical symptoms to lessen, or to clear up altogether. Manifestations of disease in the kidney region in many cases of renal tuberculosis may be absent, or so slight as not to cause any serious attention; and, therefore, it sometimes happens that when vesical symptoms are absent as well, that unless some complication arises in connexion with the kidney, the real state of affairs is quite unsuspected.

Clinical Records.

It is important to realise that the clinical features may vary considerably in different patients; for instance, my own experience, which amounts to five cases, resulted in each one manifesting itself in a different way, as follows:—

CASE 1.—A policeman, aged 40, who was killed in a street accident. At the post-mortem examination there was found a left tuberculous pyonephrosis with the ureter reduced to a fibrous cord. On examining the bladder it was found that the left ureteric orifice had shared the same fate as the lumen, as it no longer existed; its site being indicated by a mere dimple on the mucosa of an otherwise perfectly healthy bladder. The widow stated that, although she had been married to the deceased for ten years, she had never known her husband to complain of either urinary trouble or pain in the left side.

CASE 2.—A female, aged 40, who for the previous two years had complained of pain in the epigastrium towards the left side. The urine showed no pathological elements, and cystoscopy revealed a healthy bladder except for a small inactive left ureteric orifice which would admit a ureteric catheter only for 3 cm. Left nephrectomy disclosed a kidney whose parenchyma was completely destroyed with tuberculous ulceration, and the pelvis of which was blocked with caseous material, while the uppermost inch of the ureter was normal in size with the lumen not visible on naked-eye examination, and without any periureteral adhesions. The microscope made it clear that this portion of the ureter still retained a considerable proportion of muscle in its walls, which, however, were occupied largely by fibrous tissue, resulting in great shrinkage of the lumen which was occupied by caseous material (Fig. 2).

CASE 3.—A female, aged 28, who had suffered from frequency of micturition with dysuria for 12 years. On cystoscopy a typical golf-hole left ureter which admitted a catheter for 30 cm. and discharged turbid urine. The right ureteric orifice was very obvious and accessible to a catheter, but this could not be made to enter, as epithelium had grown across and sealed the opening. Guinea-pig inoculation with the deposit of the bladder urine gave a positive result for tubercle bacilli. As the disease was therefore bilateral no operative treatment was advisable.

CASE 4.*—A male, aged 20, whose only complaint was that he could see his right side to be swollen, but that never at any time had he suffered discomfort in the renal region, nor had he any recollection of urinary symptoms. On examination, there was a typical perinephric bulging in the right lumbar region, posteriorly and laterally, but there was no tenderness. Radiogram showed calcareous masses in the right renal region. The only pathological elements in the urine were a few pus cells detected microscopically. On cystoscopy, one was able to make out that the right ureteric orifice was represented by no more than a slight depression which would not admit a ureteric catheter, while on the left side there were two ureteric orifices both functioning well with effluxes of clear urine. Operation revealed a perinephric collection of clear fluid and a caseous and calcareous kidney without any vestige of parenchyma, while the attached half inch of the ureter was shrunken and difficult to identify even after dissection later (see Fig. 3). Microscopical examination of this structure showed that the lumen was completely obliterated by well-formed fibrous tissue, with scattered muscle bundles towards the periphery.

CASE 5.—A female, aged 19 years, who had complained of a painful and tender swelling in the left loin for several weeks. When I first saw her she was thin, bore a malar flush, and was running a widely oscillating temperature. There was a large tender mass in the left renal region. The patient insisted that she had never had any urinary symptoms or loin pain until suddenly taken ill a few weeks before. The urine was slightly turbid with pus. Cystoscopy showed the left ureteric orifice small and inactive, admitting a ureteric catheter only for 6 cm. I cut down on the kidney and evacuated a pint or so of greenish pus and masses of tuberculous caseous material, as a preparation for a nephrectomy later. The case was obviously one of silent, closed renal tuberculosis which had become secondarily infected.

Clinical Commentary.

Thus, to revise the outstanding features in these examples, we find we have a series of five closed renal tuberculosis cases, each with different clinical characteristics, as follows:—

No. 1. Completely silent.
No. 2. Loin pain only.
No. 3. Frequency and dysuria, pus, and tubercle bacilli in urine.
No. 4. A visible painless loin swelling, with radiographic evidence of calcification of right kidney.
No. 5. A tender renal enlargement with local and general signs of an acute infection, and some pus in the urine.

Urinary symptoms were completely lacking in two of these cases, and in a third for ten years previously if not altogether. In cases with frequency of micturition the ultimate course of this feature will be along one of two paths: either the frequency clears up completely, indicating that the tuberculous process in the kidney has become entirely shut off and the bladder lesions have healed; or the frequency persists in spite of renal occlusion in response to one of two conditions—namely, either the opposite kidney is also infected, or the bladder has become too contracted from the long-standing tuberculous ulceration to return entirely to normal. In the latter event, however, the frequency, although it continues, shows a marked improvement. Unless there is a definite clearing-up of the bladder symptoms after occlusion there is nothing to distinguish the occluded cases with frequency from the non-occluded ones with the same symptom.

It is a matter of common experience that renal tuberculosis may reach an advanced stage without giving rise to local symptoms. In 70 per cent. of Braasch's cases no loin pain was complained of. In the absence of frequency, disease of the urinary tract may never be suspected unless one of the following pathological changes occurs:—

1. Blocking of the ureter or pelvis before the functional activity of the kidney has entirely ceased, when there will be pain from distension.
2. Secondary infection occurring in the tuberculous kidney when the local and constitutional symptoms of pyogenic infection will be manifest (Case 5).[9]
3. Perforation of the renal sac by the fluid products of the tuberculous ulceration causing an extrarenal swelling, which may remain localised to the perinephric capsule, or enter the psoas sheath causing an iliac or ilio-femoral swelling.

In some cases of occlusion no complication of any kind supervenes, and the disease works itself out silently and undetected (Case 1). Braasch noted that 8·6 per cent. of 69 cases of occlusion were discovered only as a result of a general routine examination, although no urinary disease had been suspected. Swelling of the loin as the only complaint (Case 4) was noted in a number of cases reported in the literature.[10]

Of special interest are those cases of extrarenal swelling in which the mass has the same characters as a psoas abscess resulting from spinal caries. Tuffier[11] reported a case occupying the ilio-femoral region. The abscess was drained on the assumption that it was of spinal origin, and it was only on the

* I am indebted to Mr. Cecil Joll for affording me the opportunity of investigating this case.

post-mortem table that its renal source was proved. Such cases have been known to go even a stage further, and to give rise to a sinus in the lower abdomen as the presenting sign.[12] In Case 4 of my series, in which there was a visible loin swelling, the extra-renal extravasation had passed through the peri-nephric capsule and had invaded the quadratus lumborum, which showed an area of ulceration.

FIG. 2.

Photomicrograph of transverse section of upper end of ureter of Case 2. The dark patch is caseous material blocking the lumen. This is surrounded by a zone of fibrous tissue enclosed within the muscular tunic.

There still remains another clinical type of closed renal tuberculosis. In this the picture is one of chronic renal disease, often with a hypertrophied heart, an accentuated valvular second sound, and with casts and albumin in the urine. A number of these cases have been reported, chiefly by French observers.[13] Some such cases were considered to be Bright's disease, until they came to the post-mortem table, when a renal occlusion from tuberculosis was found on one side, and a simple advanced chronic nephritis on the other. The picture was carried further in two of the case reports that came under my notice, for in these the patients had both died of cerebral hæmorrhage.[14] The simple nephritis can be assumed to be due to the toxic effects of the products of the tuberculous kidney, as the association is not uncommon.

Diagnosis.

As a rule there is no obstacle to a satisfactory cystoscopy in these cases. In each of the four patients that I examined in this way the condition of occlusion was readily ascertained. A difficulty might arise from the presence of vesical ulceration, but this is not likely to be formidable, as repair is well under way if occlusion has existed for any length of time. In Case 3 I had active tuberculous lesions in the bladder to contend with, but these did not prevent me from obtaining the necessary data.

By cystoscopy there are several facts obtainable which will determine occlusion :—

1. The ureteric orifice, though visible, does not admit a ureteric catheter.
2. The ureter admits a catheter, but there is obstruction at a higher level.
3. The absence of urinary flow from the ureter.
4. The absence of dye excretion

If tubercle bacilli have not yet been identified in the urine, or tuberculous ulcers recognised in the bladder, it still has to be decided whether there is not some cause other than renal tuberculosis, for there are several other conditions which give the two last of the above findings, and one or other of the first two :—

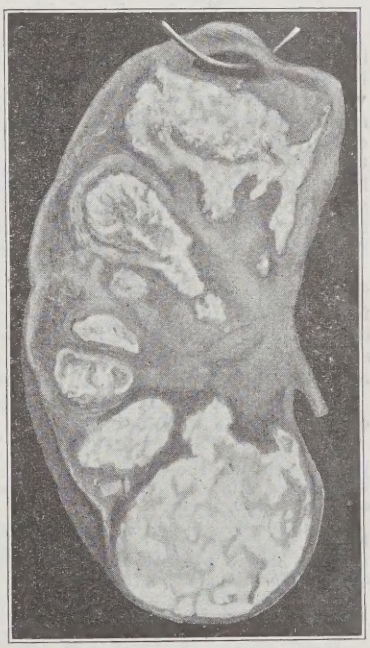
1. Congenital atrophy of the kidney and ureter.
2. Impacted stone in the ureter.
3. Primary hydronephrosis, with or without looping of the ureter over a blood-vessel.

The first is a rare condition and is not likely to be associated with symptoms. The second can be excluded by radiogram, while the third is easily decided by pyelography. As, however, nephrectomy is usually the treatment in both cases, pyelography may be considered unjustified. In all the four cases which I examined the cystoscopic signs numbered 3 and 4 were positive, while in two cases (3 and 4) the ureteric orifice in question would not admit a catheter at all. In the remaining two (2 and 5) the catheter was obstructed at different points in the lower third of the ureter. In these latter the tuberculous origin of the occlusion, although suspected, could only be proved at operation.

Radiography.—A radiogram, which should in any case form part of the routine examination, may make the diagnosis at once by revealing calcified areas in the caseous material frequently outlining the whole kidney. Braasch states that this means gave a positive result in 30 per cent. of 62 occluded cases which were examined in this way. Calcification is therefore found more frequently with the later stage of tuberculous disease than with the earlier.

Swelling in the Loin.—Extensive ulceration in the bladder, of such a degree as to prevent a satisfactory cystoscopy, may cause the surgeon to mistake a hypertrophied, perfectly healthy kidney, which is palpably enlarged, for a tuberculous one, and only on cutting down and exposing the renal organ is it made clear that the enlargement is physiological and not pathological. Under such circumstances it may be safely assumed that the opposite kidney has no functional value. I have been present when such an incident occurred. Heitz-Boyer reports the personal experience of a similar case.

FIG. 3.



Specimen of closed renal tuberculosis, showing caseous masses alternating with zones of fibrous tissue which have completely replaced the renal substance. The pelvis is a dense mass of scar without any trace of a lumen. It was through the hole indicated by the bristle that the fluid escaped into the perinephric tissues (Case 4).

In tuberculous cases generally the difficulties of getting the required information by cystoscopy can be overcome if the investigations are carried out in the proper way. First of all, spinal or general anæsthesia; secondly, the choice of the correct type of cystoscope; and thirdly, patience on the part of the surgeon, with the knowledge that several examinations may be necessary before completing the investigation.

Urinalysis.—In occluded and unilateral cases tubercle bacilli cannot be found in the great majority,

and when they are discovered in the urine, come generally from bladder lesions. The specific organism was not identified in 85 per cent. of Braasch's occluded cases. It was found in only the bilateral case of my series (Case 3).

With regard to pus and blood-cells, however, these are generally present. One or the other type of cell was detected in three of my series (3, 4, and 5). In Case 1 there was, of course, no opportunity of investigating the urine before death, but the condition of the bladder and the left ureteric orifice as found at the post-mortem examination would make it almost certain that these cells were not present, as the former had a perfectly healthy mucosa, while the latter was completely sealed off. Albumin and casts may be expected as the outstanding pathological elements when the opposite kidney is the seat of a simple nephritis as a consequence of the chronic toxæmia from the occluded side. In certain rare instances the urine drawn from the ureter of a tuberculous kidney may be free from pathological elements, owing to the fact that the focus of disease is completely encapsuled in the kidney, while the remainder of the organ excretes urine free from pus and organisms. Such an unusual contingency need only be considered when clear urine is drawn off from a kidney which has been previously proved to be the seat of tuberculosis.

The fact of diagnosing preoperatively that a tuberculous renal lesion is a closed one is of little other than academic importance. Whether open or closed the same obligations rest on the surgeon, first of all to prove the existence of a tuberculous lesion, and then to determine whether or not it is bilateral.

Treatment and Prognosis.

The non-operative treatment of the occluded kidney in unilateral renal tuberculosis has been advocated by some on the grounds that the disease has already worked out its own cure. It is quite true that the active tuberculous process may ultimately completely disappear, for Braasch was able to demonstrate that the tubercle bacilli could no longer be identified in four out of five operation specimens, which he investigated by guinea-pig inoculation. But whether the infection has ceased to exist in any given case it is impossible to say until the kidney is removed.

In those rare cases in which the disease is temporarily localised, either by encapsulation of a focus in the kidney, or by a non-permanent blocking of the pelvis or ureter although a cessation of existing symptoms may suggest a cure, a recurrence of these at a later date will show that this has not been effected.

The dangers of leaving an occluded kidney to take care of itself are threefold :—

1. There is a likelihood that tubercle bacilli are still present and are therefore liable to be carried off from the kidney to other parts of the body, and especially to the opposite renal organ.

2. Secondary infection may occur in the destroyed kidney, and give rise to an acute pyonephrosis. This may follow a trivial infection in some other part of the body, or supervene during a pregnancy.[15]

3. Continued toxæmia from the occluded organ may produce chronic interstitial nephritis of the other kidney.

With regard to operation, the same rule holds as for tuberculous kidneys generally—namely, to remove the diseased organ in unilateral infection—and only under conditions involving an urgent complication, such as secondary infection with marked symptoms, or perinephric extension, would it be justifiable to intervene surgically knowing the other side to be tuberculous. The attempt to benefit the patient by removing the worse of two tuberculous kidneys is now recognised as productive of more harm than good. Judd and Scholl,[16] in reporting on 18 such cases, state that 14 of these were dead within 18 months of the nephrectomy. Both from the point of view of post-operative mortality, and difficulties of actual removal of the kidney, the circumstances are more favourable in the closed than in the non-closed variety, in which there is still actively excreting tissue. First of all because in the closed case the opposite kidney has already been doing the whole of the renal excretory work, so that this organ has no extra strain after nephrectomy. In the second place, removal of an old-standing occluded kidney is generally an easy matter, as it presents but few perinephric adhesions, and in most cases the wound heals by first intention without drainage. With a recently occluded, or a secondarily infected kidney, however, the adhesions may be so extensive as to render the nephrectomy exceedingly difficult. When there is a perinephric abscess this should be drained first. There is a definite mortality associated with the one-stage procedure.[16]

Summary.

Closed renal tuberculosis occurs in at least 10 per cent. of renal tuberculosis cases coming to operation, but it has been found to be as high as 18 per cent. in cases reaching the post-mortem table. It is almost invariably associated with a sealing-off of the renal pelvis, on which inevitably follows complete destruction of all active renal tissue. The ureter is commonly only superficially destroyed, with its lumen occupied by fibrous tissue. The disease may go through all its stages to complete destruction of the kidney without any urinary symptoms, and in many cases is only detected as a result of some complication supervening. In others the clinical features are those usually seen with urinary tuberculosis, which, however, may disappear spontaneously. The diagnosis is not difficult if the proper methods are employed in investigating the urinary tract. Nephrectomy is the treatment of choice, and the prognosis following this procedure is good.

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IRRADIATED MILK:

ITS EFFECT ON THE BLOOD.

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RECENTLY the effects of ultra-violet light on man and animals have been investigated by many workers, both the direct effects by the exposure of patients to the rays and the indirect by giving various irradiated foods.

Ultra-violet light has been shown to increase calcification in rickets and in tuberculosis of the bone. Hess and other workers showed that the exposure of certain foods to ultra-violet light radiations conferred upon those substances antirachitic properties which they did not previously possess. Cowell [1] (working with Mellanby) then improved the calcification of bones and the general condition of rickety children by irradiating part of their diet with ultra-violet

[1] S. J. Cowell: Irradiation of Milk and the Healing of Rickets, Brit. Med. Jour., 1925, i., 594.

light. One of us has since found that similar good effects on the calcification of bones and general condition of patients with osseous tuberculosis are produced by exposing part of the milk of their diet to ultra-violet rays.[2]

Conflicting statements have been made as to the effect of ultra-violet light on the blood. Early workers showed that the number of red cells was increased, but this has not been confirmed by subsequent investigation, and is now generally considered to be due to a higher concentration of the blood. As the general health of patients having irradiated food was improved in the investigations mentioned above, it was considered desirable to determine whether in such cases any changes could be seen in the blood. Observations were made on children who had been in hospital with active bone tuberculosis for an average period of four months, without marked improvement in either general condition or local lesion. During this period they had been given the ordinary hospital diet which included cod-liver oil and 1¼ pints of milk daily, in all respects a good diet, especially from the point of view of vitamin content. The erythrocyte count and the hæmoglobin content of the blood were investigated in a number of cases from which the five patients with the smallest red cell counts were selected.

Half a pint of the 1¼ pints of the milk in the diet of these patients was exposed daily to the rays from a quartz mercury-vapour lamp at a distance of about 2 feet for half an hour. The milk was contained in shallow trays and stirred frequently. The remaining constituents of the diet were as usual. After four weeks the red cells and hæmoglobin were again estimated, and were found to have increased in all the patients. A further increase in the red cells was again noticed at the end of another four weeks, but the hæmoglobin varied. The milk was then given without radiation for another four weeks, a fall in the reds was found to have occurred in every case, and a reduction of the hæmoglobin had taken place in four out of five of the patients. The same amount of milk (irradiated) as before (½ pint) was then given daily, and at the end of three weeks the red cells had in every case increased; the hæmoglobin, however, had only slightly altered; in one its percentage was increased, in two cases it was unaltered, and in the remaining two decreased.

The following table shows the changes occurring in the number of red cells, and the amount of hæmoglobin during this period in each patient. The *average* is shown in the graph.

Case.	Age in years.	—	On ordinary milk.	After 4 weeks radiated milk.	After further 4 weeks radiated milk.	After 4 weeks non-radiated milk.	After 3 weeks radiated milk.
J. M.	5	A	*4,150	4,920	5,055	4,620	5,220
		B	68	68	62	58	54
J. G.	6	A	4,015	4,130	5,660	5,370	5,390
		B	77	78	80	72	70
A. D.	10	A	3,950	4,600	5,600	5,120	5,370
		B	79	83	80	74	74
H. B.	15	A	4,380	4,820	5,190	5,140	5,390
		B	79	80	80	80	80
E. H.	3	A	4,250	5,240	6,100	4,850	5,320
		B	80	83	88	70	72

A = Red cells per c.mm. B = Hæmoglobin percentage.
* Represents millions in each instance.

The improvement in the happiness and general health of these children after eight weeks radiated milk was extremely marked; the local lesion had also improved.

J. M.—General condition greatly improved. Local condition, as shown by clinical examination and X rays, definitely improved.

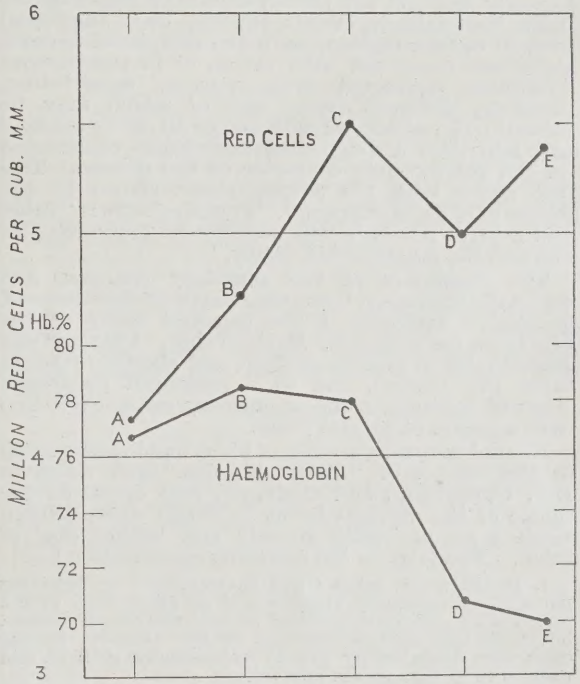
J. G.—General condition improved. Locally X rays show slight increase in calcification. Activity of hip disease less marked clinically.

A. D.—General condition greatly improved. X rays and clinical examination show that the local condition is definitely better.

H. B.—General condition greatly improved. Local condition clinically improved, but X ray shows no apparent change.

E. H.—General condition improved. Local condition as shown by X ray and clinical examination definitely improved.

The condition of the blood of six other children between the ages of 2 and 14 years, who had been on radiated milk daily for an average of ten months, was then investigated. The average red cell count was 5,030,000 c.mm., the lowest (L. S., aged 2 years) being 4,390,000 and the highest 5,970,000. The hæmoglobin in every case was high, the average being 78 per cent. and the estimations ranging between 74 per cent. (M. S., aged 12 years) to 84 per cent. (D. B., aged 9 years). This would suggest that the fall in the hæmoglobin, shown in the graph above, does not occur for long, and that the rise in the number of red cells is not continued above a certain point.



A B = radiated milk four weeks; B C = radiated milk four weeks; C D = ordinary milk four weeks; D E = radiated milk three weeks.

In estimating the red cells the blood was mixed with the diluting fluid thoroughly by shaking for two minutes. In order to ensure accuracy two estimations were made on each occasion, in each of these five sets of 16 squares were counted, so that the total number of sets was ten. For the hæmoglobin the Gowers-Haldane hæmoglobinometer was used, and two estimations were made.

Although the number of cases investigated is, of course, too small for any generalisation to be made, the results in the five patients mentioned were so definite that further work in this direction may be desirable.

[2] C. Lee Pattison: Effect on Tuberculosis of Bones and Joints of Food Exposed to Ultra-Violet Radiations, Brit. Jour. Radiology, February, 1926.

ATYPICAL TABES.*

CLINICAL VARIATION IN THE COURSE OF THE DISEASE.

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Tabes dorsalis is of all diseases the most unequivocal in its manifestations. The variations in the course of the disease are numerous, and constitute many different clinical types. The atypical forms are as frequent as the classical type—"l'ataxie locomotrice progressive" of Duchenne. The irregular forms appear to occur more frequently of late, perhaps as a result of the modern treatment of syphilis; this question will be later discussed. Mott[1] insisted on the unity of tabes and general paralysis in these terms: "I maintain that ætiologically and pathologically there is *one tabes* which may begin in the brain (especially in certain regions), or in the spinal cord in certain regions, or in the peripheral nervous structures connected with vision, or in the nervous structures connected with viscera, constituting, therefore, different types, any of which may be present or be associated with one or all of the others," and later this distinguished neurologist commented on the polymorphic character of the disease. This fact agrees with the polymorphism shown by the lesions of syphilis in general. Fournier[2] says: "Tabes and general paralysis will be different expressions of one and the same morbid entity."

The constancy of the pupillary changes, and especially the Argyll Robertson pupil, affords the most conclusive evidence of the essential unity of the affections designated by Mott—Tabes. Charcot[3] and Marie[4] refer to mild, imperfect, and abortive cases of tabes (*cas frustes*), and to a prolonged prodromic stage of lightning pains in ordinary cases, extending over a period of several years.

Nonne[5] devotes a section of his valuable monograph to the subject of "Tabes Atypica," and refers to Erb, Oppenheim, and Gerhardt, who discussed the theme of the atypical forms in Berlin when demonstrating an unusually chronic and benign case of tabes. Nonne gives the following classification:—

1. Rudimentary tabes (Erb) characterised by lightning pains of extraordinary violence and duration, even over a period of 20 years or longer, and without any objective signs, but with ultimate development of the disease. Similar cases were described by Erb at Baden-Baden in 1900, and caution in prognosis was advised.
2. Abortive or quiescent tabes (?) showing pupillary anomalies with isolated loss of the patellar reflexes, but which may equally be due to healed meningitic or meningomyelitic lesions.
3. Isolated ataxy without other objective signs, or subjective complaints.
4. "Tabes atypica" showing the usual alteration in the pupillary and patellar reflexes, an irregular disturbance of sensation, and a slight disturbance of the bladder. Energetic specific treatment prevents the development of further signs, and more especially ataxy.
5. Isolated gastric crises.

Nonne refers to the contribution of Dunger,[6] who stated that gastric crises may be an early symptom of the disease. The pupillary and patellar signs of tabes may be present or absent, but a pleocytosis of moderate or marked degree is usually present. Nonne's cases in this group were observed before the other reactions of the cerebro-spinal fluid were known. He recommends a cautious attitude (*toujours en vedette*) in such cases before the outbreak of tabes.

Clinical Records.

Rudimentary or Abortic Tabes.

CASE 1.—Male aged 63. Contracted syphilis at 35, inadequate treatment. Onset of severe lightning pains ten years later, which persisted unchanged for 20 years. A man of marked literary ability. He had seen Bastian who made a diagnosis of "abortive tabes," and also Gowers and Ferrier, who concurred with Bastian's view. The treatment of their day was thoroughly administered. He was entirely free from other signs of tabes except for sluggish pupils and knee-jerks for at least 15 years. He came under the care of the writer for the last two years of his life. Pupils unequal and reacted sluggishly to light. Knee-jerks unequal and sluggish. Slight sensory disturbance of legs. Occasional nocturnal enuresis which gradually became worse. Ataxy absent throughout. W.R. negative in C.S.F. and blood, other details of C.S.F. unknown, refused another examination. Suffered from lightning pains of great severity and general distribution; worse at night, and of fairly frequent incidence along ulnar area of upper limbs. Duration: 20 years, and death from the effects of cystitis.

Mild or Quiescent Tabes.

CASE 2.—Male aged 63. Missionary. Primary sore on finger "whilst acting as midwife" in Madagascar. Onset of tabes ten years later. Lightning pains, moderately severe, appeared early, and persisted, but abated later. Complained of a "facial stiffness" causing difficulty in articulation. This, which incapacitated him when home on furlough nine years later, was probably an ataxic condition, for there was no tremor or spasticity. Argyll Robertson pupils and absent knee-jerks. No ataxy, but slight Rhombergism. No anæsthesia. Occasional slight nocturnal enuresis for several years, and micturition a little precipitate at times during the day. W.R. of blood negative. C.S.F. not examined. Returned to active work in Madagascar for five years, but for three years had difficulty in micturition with occasional incontinence. Sent home as a probable case of prostatic obstruction, and admitted to King's College Hospital under Sir John Thomson-Walker and also seen by Dr. Kinnier Wilson. The following physical signs of tabes were found: Argyll Robertson pupils, knee- and ankle-jerks absent. Gait a little ataxic. Defective joint sense, and some paræsthesiæ of legs. C.S.F. showed 14 cells per c.mm. Globulin and sugar normal. Total protein, 0·05 per cent. Chlorides, 0·7 per cent. Micturition frequent and urine contained pus in considerable quantity. Complaint of stiffness and pain in facial muscles and anus. Treated for cystitis and with N.A.B. in small doses. Death occurred two months later. Duration of tabes, 15 years.

Tabo-paresis.

CASE 3.—Male aged 60. A case of optic tabes of nearly two years' duration. Bilateral primary optic atrophy. General state poor, mental state normal. Pupils equal, slightly irregular, no reaction to light, and eyes converged only on accommodation. Paresis of right external rectus muscle. Vision R.E. very poor, L.E. fair. Slight incoördination and Romberg's sign present. Sensation and sphincters unaffected. Onset with an attack of unconsciousness. He has been subject to recurrent attacks of coma of brief duration at intervals of 7 to 14 days, usually at night. No convulsion, but becomes rigid, and respiration is stertorous. No hemiplegia, otherwise these attacks closely resemble the congestive seizures of general paresis. Blood and C.S.F.: W.R. strongly positive. Globulin marked, and 35 cells per c.mm. Benedikt, who first described optic tabes, stated that the abortive cases of tabes are the ones in which optic atrophy is a prodromal symptom.

CASE 4.—Male aged 34. Served in Navy for 14 years. Primary syphilis in 1912, and received thorough treatment for over two years when he was informed that the W.R. was negative, and marriage was not forbidden. Three healthy children, and wife has had no miscarriages. Remained well until recently, when he became apprehensive owing to occasional loss of memory. Condition as follows: Anxious expression, feared insanity, evident loss of memory, mental state otherwise normal. No tremors or speech disturbance. Pupils unequal and reacted sluggishly to light but promptly to accommodation. Coördination, sensation, and sphincters unaffected. Knee-jerks obtained only on reinforcement, and were unequal. Ankle-jerks absent. Blood: W.R. a moderate positive. C.S.F. strongly positive. Globulin present. 20 cells per c.mm.

CASE 5.—Male aged 46. A case of tabo-paresis. Primary syphilis at 20 years. Suffered for several years from malaria contracted at Salonica in 1915, and last paroxysm in 1922. First seen in 1923. Depressed mental state, pupils small and Argyll Robertson type. Knee- and ankle-jerks absent. Slight Rhombergism only. W.R. a feeble positive in blood. C.S.F. not examined. Observed and treated for two years, condition unchanged until three months before death, when delusions of grandeur appeared with epileptiform convulsions which became very violent and frequent later. It is probable that the course of the disease in this case was modified by malarial infection. Death in an asylum three years from date of diagnosis of tabes.

* Abstract communicated to the Association of Physicians of Great Britain and Ireland at Newcastle-on-Tyne, 1926.

CASE 6.—Male aged 41. Duration six months. Progressive mental enfeeblement with visceral delusions. Pupils unequal and reaction to light sluggish. Absent knee- and ankle-jerks. Loss of bulbo-cavernosus reflex. No ataxy, slight Rombergism. Hypotonus slight. W.R. definitely positive in the blood and C.S.F., and latter showed a marked increase of globulin and 45 cells per c.mm.

Gastric Crises.

CASE 7.—Male aged 37. Typical gastric crises dated from 1917, when he was invalided from Salonica to Malta, where he had an operation for "appendicitis." No notes of his condition at that time were available, but he gave a clear account of periodical attacks of abdominal pain and vomiting from onset of disease, identical with those recognised later as gastric crises. It is probable that the signs of tabes were then either very slight or absent. He was sent home 16 days after the operation, and has suffered periodically from severe gastric crises up to the present time. Two further abdominal operations were performed; one in 1920 for possible adhesions, and a few were found between the gall-bladder and duodenum. The other in 1924, when tabes was first found. His condition at that time was as follows: General nutrition very poor, slight ptosis. Pupils small, irregular, and Argyll Robertson in type. No ataxy. Marked analgesia of legs. Tendon reflexes all present, except for absence of the right ankle-jerk. Knee-jerks exaggerated, especially the right. The abdominal reflexes were brisk. Blood and C.S.F.: W.R. positive. 44 cells per c.mm. Globulin absent. He suffered severely from gastric crises and an Ewald test-meal gave the following results: Free HCl, 10 units Topfer, 0·036 per cent.; combined acids, 22 units Topfer, 0·079 per cent.; total acids, 32 units Topfer, 0·115 per cent. Lactic acid present with much mucus and undigested starch cells. Squamous and endothelial cells. Yeast and a Gram-positive bacillus, probably Boas-Opler. No occult blood. On another occasion the vomited material contained no free HCl, but 0·208 per cent. total acidity, and small amounts of blood were observed in the vomit on several occasions.

Diagnosis of abdominal condition doubtful, because of severity of symptoms and extent of general disturbance, and possibility of ulcer and cancer was considered. Laparotomy was performed and some adhesions were found between the gall-bladder and the duodenum, "all viscera otherwise normal." No gastro-enterostomy found, as had been expected. The patient came under my care soon after the third operation. Physical signs much as in previous note, and left ankle-jerk still present. Marked muscular atrophy of legs (tabetic amyotrophy). Hypotonus so marked that he could place his legs around his neck. Ataxy absent until six months ago, and has since progressed somewhat rapidly. Loss of joint sense in a few toes only. Severe gastric crises occurring almost daily and only relieved by morphia. Occasional lightning pains of moderate severity for the last six months only. Blood and C.S.F.: W.R. negative. Globulin present. 20 cells per c.mm.

CASE 8.—Male aged 45. Onset of atypical tabes with gastric crises in 1918, and lightning pains for the last three years. The gastric crises occur at infrequent intervals and are of moderate severity.

Present state: General condition good, and he is continually employed except at time of crises. Argyll Robertson pupils which are also small and unequal. No ataxy in ordinary locomotion, but walks with a slightly widened base, and unable to walk a plank. Slight Rombergism. Tendon reflexes present and brisk in the upper limbs. Left knee-jerk and both ankle-jerks absent. Examination of right knee-jerk gave a very feeble muscular response only on reinforcement. No sensory or sphincter disturbance. Observed since 1925 and has had several courses of small doses of N.A.B. intravenously, and mercury and potassium iodide internally. Blood and C.S.F.: W.R. strong positive. Globulin present. Pleocytosis very slight (less than 10 cells).

CASE 9.—Male aged 44. Onset of atypical tabes with gastric crises in 1922, and now in an advanced stage of the disease. Evidence of cardiovascular change shown by slight cardiac hypertrophy, localised systolic bruit over ascending aorta, accentuated second sound, B.P. 136/90. Blood and C.S.F.: W.R. indefinite positive. 20 cells per c.mm. Globulin present.

CASE 10.—Female aged 33. Tabes commenced with gastric crises in 1922. Abdominal operation in 1916 at a large general hospital for "an affection of the womb." A second operation was performed at a Poor-law infirmary in 1924 owing to recurrent attacks of acute abdominal pain and vomiting. An inflamed appendix was removed. The uterus appeared normal, and showed no sign of previous operation. A typical case of advanced tabes. Patient confined to bed, and still suffers from gastric crises at fairly regular intervals of three to four weeks. One pupil still reacts slightly to strong illumination, and both pupils show paradoxical reaction to ordinary light. The right external rectus muscle is paralysed. The arms are ataxic and show athetosis. Marked amyotrophy of legs. Blood: W.R. very weak positive; C.S.F.: W.R. strong positive. Globulin present. Slight pleocytosis (20 cells per c.mm.).

Tabes with Epileptiform Attacks.

CASE 11.—Male aged 56. Primary syphilis at 25. No treatment. "Epilepsy" from 1915 and treated with bromides only. Major attacks for several years almost regularly once a month during sleep just before waking, infrequent of late, and now subject to petit-mal attacks at monthly intervals. Tendency to retention of urine for many years, and mild cystitis on a few occasions. Mental state somewhat feeble, no gross change. Pupils unequal and oval, inactive to light, active to accommodation. Tendon reflexes preserved and brisk, plantar reflexes flexor. No ataxy or Rombergism. Group of typical scars of past syphilitic lesions on back of left forearm. Irregular thickening of crests of tibiæ. Analgesia of tendo Achillis (Abadie's sign), and of ulnar nerve at elbow (Biernacki's sign). Blood and C.S.F.: W.R. definite positive. Globulin present. 35 cells per c.mm. The disease appears to have been quiescent, but valuable time was lost before the administration of antisyphilitic remedies.

Aortic Incompetence with Quiescent Tabes.

CASE 12.—Male aged 49 years. Duration of heart affection 10 years. Lightning pains in legs for several years past, otherwise free from symptoms of the nervous affection. Aortic incompetence, moderate lesion, probably syphilitic in origin. Extreme arteriosclerosis of peripheral vessels. Blood pressure: Arm, 210/90. Leg, 260 systolic. Pupils unequal and show Argyll Robertson phenomenon. Tendon reflexes absent in lower limbs except for slight response in quadriceps on reinforcement. Coördination, &c., normal. No ataxy in locomotion or Rombergism; inability to walk a straight line or stand on one foot; slight loss of joint sense in toes only; sensation and sphincters normal; W.R. in blood and C.S.F. strongly positive. Pleocytosis (56 cells per c.mm.). Globulin present in definite amount. Lange's colloidal gold reaction showed a typical paretic curve.

Cases of Arthropathy with Evidence of Tabes.

CASE 13.—Male aged 50. A bilateral severe affection of the knee, two years' duration, gradual onset, almost painless throughout. An arthropathy of the right wrist of three years' duration. The knee-joints were symmetrically affected by a synovial effusion of almost maximum extent. The skin was pale, thinned, and marked with prominent veins. Marked muscular arthropathy, especially of the legs and of the quadriceps muscles. Uniform swelling of the synovial sac without thickening of the membrane. No loose bodies felt. Movements fairly free, painless but crepitant. Slight lateral mobility only, and no hypotonus of the limbs. Puncture revealed a straw-coloured glairy fluid, free from blood. The wrist-joint was slightly and irregularly swollen, and almost fixed. Moderate atrophy of right thenar eminence and of first dorsal interosseus muscle. A skiagram of the knees showed absorption of cartilage with some atrophic bony change. No osteophytic growths. The bones of the affected carpus were almost adherent, the interarticular spaces being much narrowed and indistinct.

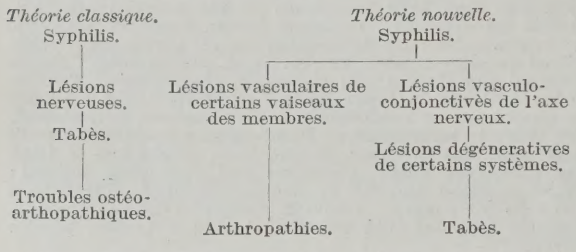
A general examination showed marked emaciation, patient being almost cachectic. Pupils unequal, and of oval outline. Bilateral Argyll Robertson reaction. All reflexes normal. No disturbance of joint sense, coördination sensation or of sphincters. Definite history of syphilis at 20 years of age, and was treated for three months only. Lightning pains of moderate severity in the lower limbs for the past three months. W.R. of blood and C.S.F. negative, and latter was otherwise normal.

CASE 14.—Male aged 60. Primary syphilis at 23, and inadequately treated. Lightning pains moderately severe at infrequent intervals for the past 25 years, and attributed to "sciatica and neuritis." Micturition somewhat precipitate for several years, and nocturnal enuresis on several occasions. Loss of feeling in left thumb and right little finger. Arthropathy of right knee, 12 weeks' duration, followed injury through fall, and knee was much swollen and painful. History of similar swelling of six months previously without injury, and which subsided in a few weeks. Extensive synovial effusion of right knee. Marked lateral mobility with crepitus. Many nodules felt, probably loose bodies. Skiagram showed destructive bony change in articular extremities, especially in outer head of tibia and external condyle of femur. The upper end of the fibula showed considerable loss of substance, and was completely separated from the shaft. Marked periostitis of upper third of fibula, and over lower third of femur. General state good. Pupils

reacted very sluggishly to light, a fair response to accommodation. Both knee- and ankle-jerks absent. Some blunting of common sensation of left thumb and right little finger. Abadie's and Biernacki's signs present. W.R. of blood and C.S.F. negative. Globulin absent. No pleocytosis.

Case 13 is one of the varieties of articular syphilis and probably of the nature of chronic synovitis. The characteristics are not those of a gummatous synovitis (infiltration gommeuse périsynoviale de Lancereaux) which usually responds well to anti-syphilitic remedies. The case in question has shown no improvement after such treatment. The effusion in its appearance and extent was similar to that usually found in Charcot's osteoarthropathy. The other signs are probably sufficient to warrant a diagnosis of abortive tabes. Case 14 resembles the osteoarthropathy of Charcot more closely than one of the other forms of articular syphilis. The general signs are those of rudimentary or abortive tabes. The cases are included to present Barré's[7] view that Charcot's osteoarthropathy is not peculiar to tabes, but is a syphilitic condition. He reports numerous cases of osteoarthropathy where there was no evidence of tabes: *l'arthropathie à type tabétique du syphilitique non tabétique.*

Barré[7] submits what he calls the classical and new theories in a tabular form.



The first case of the present contribution is definitely not one of osteoarthropathy, but mainly one of synovitis, and of probable syphilitic origin, for there is no evidence of tuberculosis, and the characters of the knee affection are not altogether those of rheumatoid arthritis. The association with tabes is apparently coincident. The second case is an osteo-arthropathy similar to that described by Charcot, but unilateral, and painful in its development. The condition of tabes is rudimentary only, and unless a premises of gross trophic periarticular change is assumed solely around one joint, then the arthropathy is clearly not of tabetic but of syphilitic origin.

Remarks.

It would be more correct, perhaps, to group these various forms under a comprehensive title of tabes, than to distinguish them as an atypical class. The irregular or incomplete forms appear to be more numerous of late, as Nonne affirms. He surmises whether this is due to a more thorough treatment of syphilis, earlier diagnosis of tabes, or alteration in the character of the disease. The first assumption is excluded, because most of his cases had only an imperfect cure of former lues. It is rational to believe that early and energetic treatment of the cause must influence the incidence of its effects, but such is not invariably the case with syphilis, as most authorities are agreed. The other assumptions may be true, for, as Nonne suggests, earlier diagnosis would protect the patient from excesses which would be prejudicial to his progress. He also reminds us of the fact that general paralysis now occurs oftener in the form of simple dementia than as "classical paralysis."

Salvarsan was introduced by Ehrlich in 1906, and gave an impetus to a more thorough general treatment of syphilis. Neurologists may now be in a position to estimate the influence of modern treatment on the incidence and character of tabes and other forms of cerebro-spinal syphilis. If early diagnosis of tabes leads to its amelioration, then we must try to define its symptomatology more precisely. In the absence of a pathognomonic sign, or choice of a minimum syndrome, we must rely on almost conclusive elements of diagnosis. This was the view of the Society of Neurology[8] in Paris in 1911 at a special session devoted to the subject of "délimitation du tabès." The fundamental signs and symptoms are well known. Mott states:

"The fundamental symptoms and signs of tabo-paralysis and of tabes are: (1) Reflex pupil rigidity. (2) Lightning pains. (3) Absence of deep reflexes. (4) Visceral disturbances, bladder troubles, and gastric crises. (5) Disturbances of sensibility. (6) Motor disturbances. (7) Mental disturbances."

Mott further says that "a diagnosis can be made if the pupil rigidity exists, combined with any of the others." Gowers[9] points out that the Argyll Robertson pupil may be the sole sign. One or more of the other signs generally appear sooner or later. The Argyll Robertson pupil is for all practical purposes pathognomonic of the group of affections called by Mott—tabes. The light reflex is the most sensitive of all the reflexes, and is particularly susceptible to the action of the syphilitic toxin. These facts, perhaps, account for its early loss in tabes.

Sir John Rose Bradford, in his teaching at University College Hospital, maintained that the Argyll Robertson pupil meant (1) syphilitic infection, (2) syphilitic affection of the nervous system. This sign has been reported to exist in some cases of chronic alcoholism and other diseases by authors quoted by Barré[7] and Purves-Stewart.[10] Mott, in this connexion, says "of alcoholism and other diseases . . . these cases are complicated by syphilis." The unreliability of the W.R. in tabes makes it very difficult to exclude the disease absolutely. A sluggish pupillary reaction to light without other ocular abnormality should be regarded with suspicion. Loss of the normal pupillary unrest (Hübner[11]) referred to by Purves-Stewart may be one of the earliest signs of organic affection of the reflex visual path—e.g., in tabes or general paralysis.

Barré[7] suggests the following rule in diagnosis: "There is tabes when with the Argyll Robertson sign is associated at least one of the triad (Argyll Robertson sign, cerebro-spinal lymphocytosis, abolition of an Achillis reflex)." Nonne[5] emphasises the importance of confirmatory methods (*Auswertungsmethoden*) and in particular the four reactions (*vier Reaktionen*)—viz., the W.R. of the blood and cerebro-spinal fluid, lymphocytosis, and the presence of globulin (phase 1 Nonne) in the fluid. Barré says: "The Wassermann reaction with 0·2 c.cm. of the cerebro-spinal fluid is very inconstant in cases of tabes, and one cannot rely on it to affirm or deny the existence of this malady," and most authorities will agree with this statement.

Lymphocytosis arising from a chronic meningeal reaction is not specific of tabes or even of syphilis, for it occurs in other diseases, and more especially as Nonne[5] states in caries of the spine with compression of the cord, and sometimes in other non-syphilitic varieties of compression myelitis. This sign is more constant and marked in parenchymatous syphilis than in the other named conditions. The fluid above the obstructed area in cases of compression is usually normal. The four reactions and especially the Wassermann reaction are more marked in cases of tabo-paresis, or when cerebral symptoms are prominent. The Wassermann reaction may be positive in the cerebro-spinal fluid when negative in the blood, as Mott showed many years ago. These reactions as a rule correspond with the clinical condition, but are not always in agreement, as was shown in the second case of gastric crises where the Wassermann reaction in the blood and fluid was strongly positive, although the disease appears to be quiescent, and there was little or no pleocytosis, and conversely in Case 3. The ankle-jerks disappear before the knee-jerks, as was first shown by Babinski. These reflexes should be systematically and methodically examined. A sluggish response precedes loss, and one goes generally before the other. The knee-jerk is more easily examined, but with a precise method of examina-

tion the ankle-jerk is quite as easily obtained in normal individuals.

Increase of protein in the cerebro-spinal fluid occurs in cases of parenchymatous syphilis, and in all forms of spinal compression. The protein found in the former group of diseases is globulin, and constitutes the "phase 1 reaction of Nonne." The other signs of tabes should be investigated, and in particular a careful search made for early signs, as insensitiveness of the tendo Achillis to firm pressure (Abadie's sign), loss of the cremasteric reflex, or of the bulbo-cavernosus reflex. Disturbance of the sphincter urinæ shown by a tendency to retention sometimes occurs early, and a little residual urine may be found. Such cases were called by Guyon "false urinary patients." Marie [4] refers to Fournier, who says "these patients only pass water in several acts."

Mott[1] includes lightning pains in the list of fundamental symptoms and signs, and Barré [7] attaches "a great importance to the fulgurant pains when these have a well defined character." Charcot[3] says, "during long years these pains may of themselves alone compose the entire symptomatology of the disease."

The pains of peripheral neuritis, especially when due to alcoholism and arsenical poisoning, may simulate the lightning pains of tabes, but as Marie [4] says, "they have not precisely the same characters as the lightning pains of tabes." The pains are more specially seated in the muscles, and increased by pressure, and less fugitive, and but rarely occur paroxysmally. The root pains of extra-medullary tumours are alone comparable in intensity to the lightning pains of tabes. The characteristics of gastric crises have been well defined by Charcot,[3] Marie,[4] Dunger,[6] and others.

Review of Cases of Gastric Crises.

The principal features shown by the cases included in this contribution were :—

1. The patients were ill-nourished, or even emaciated, and much debilitated.
2. An abrupt onset and termination of the attacks.
3. Duration usually prolonged over the period within which peritonitis is probable in other acute abdominal states.
4. Periodicity was well shown in one case where the attacks occurred for years regularly on waking.
5. Variability in duration and intensity of attacks when observed over a long period. Earlier attacks only in cycles.
6. Rapid recovery of the digestive functions so that the patient often takes a full meal within an hour of cessation of a severe attack. This was a feature of three of the cases, but one patient complained of nausea for several days after the more severe attacks.
7. The general disturbance at the height of a paroxysm closely resembles that of the common acute abdominal states.
8. *Extreme restlessness*, the patient writhes in agony, and rolls about in pain, and assumes various postures in an endeavour to secure relief—e.g., Case 1 was found several times in a self-imposed trussed-up position, with his legs around his neck. This state of restlessness in cases of gastric crises is in sharp contrast with the immobility of the ordinary "acute abdomen."
9. A mental state of acute misery, and bedclothes often drawn over the head, and examination resented.
10. Distribution of pain more that of a gastro-enteralgia, and pain is relieved by pressure.
11. Absence of localised tenderness and rigidity. Examination difficult and apparent localisation of signs in epigastrium or elsewhere most inconstant and untrustworthy.
12. Absence of distension, abdomen being usually retracted.
13. Isolated attacks of pain without vomiting, described by Fournier [2] as a cramp-like pain.

A routine examination is likely to disclose the cause—tabes—even when the disease is in an early stage, as shown by one or more of the physical signs already described. The cerebro-spinal fluid should be invariably examined in suspected cases. Confusion with acute abdominal emergencies only arises in earlier attacks. The ordinary acute abdominal affections may occur in tabetic patients, and may be painless throughout, as we are reminded by Purves-Stewart.[10]

The main objects of this paper are : (1) To draw attention to the prevalence of the irregular manifestations of tabes. (2) To support the principles of treatment advocated by Buzzard[12] in his Lettsomian lectures. Syphilis is, as he says, a lifelong disease. Sufferers should be subject to supervision for the remainder of life. The advantages and possible disadvantages of such a plan were ably suggested in a subsequent editorial article in THE LANCET.[13] A feeling of security engendered in a majority would far outweigh any possible disadvantages to a minority. Such a policy would certainly result in at least an amelioration of the late sequelæ of syphilis.

I am much indebted to Dr. W. Parry Morgan, of the Cardiff and County Public Health Laboratory, and to Dr. H. A. Scholberg, pathologist to the Cardiff Royal Infirmary, for their examinations of the blood and cerebro-spinal fluid in the illustrative cases.

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Medical Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

A MEETING of this Section was held on Nov. 26th, with Mr. R. C. B. MAUNSELL (in the absence of the President) in the chair.

Mr. H. S. MEADE showed a specimen of

Carcinoma of the Pelvic Colon involving the Bladder.

The patient was a woman, aged 69, sent to him on March 19th, 1926, for cystoscopy. Immediately after a motor accident in June, 1925, she noticed that she was obliged to sit sideways when she wished to pass water, but this symptom passed off. At the time of examination she said that for 18 months she had had frequency of micturition, accompanied by scalding pain. This trouble had been growing steadily worse, and she had to pass water every hour both day and night. The urine contained albumin, bacteria, and a few leucocytes.

On March 20th an attempt at cystoscopy was made, but the result was unsatisfactory, owing to the patient's nervous state and to the fact that the capacity of the bladder was only half an ounce. Any dilatation caused extreme pain. No sign of inflammation was seen. The patient was kept in bed and gradual dilatation tried. She refused an anæsthetic until March 29th, when cystoscopy was done. The bladder dilated up to 8 ounces easily, and there was no evidence of any inflammation except the congestion of the trigone so often seen in the female bladder. Chromocystoscopy with indigo-carmine showed the dye coming from the right kidney in five minutes and from the left in four minutes.

Rectal and bimanual examination revealed a mass on the left side of the pelvis in the region of the left broad ligament ; it extended above the brim of the pelvis and appeared to be well fixed. A sigmoidoscope was passed, and a carcinoma of the pelvic colon found. Owing to the age of the patient, the fixity of the growth, and her terror of operation, it was decided to treat her with deep X rays. On April 6th Dr. M. R. Hayes gave her a dose of 100 per cent. X rays, estimated by Holdfelder's field selector and calculated by Solomon's iontoquantimeter. It was administered in two portions on April 6th and 7th, the factors being as follows : wave length, A.U. 09 ; field, 12 × 10 cm. ; focal skin distance, 30 cm. ; filter, 0·5 mm.

with 2 mm. aluminium. Irradiating from the front, one field was over the left Poupart ligament and the other over the right on the first day. On the second day one field was through the centre of the sacrum from the back, with two smaller ones on either side of it. The factors for the smaller fields were: 6 × 8 cm. F.S.D. 23 cm. The exposure for the larger field was 60 minutes and for the smaller one 35 minutes.

The treatment was borne well. Dilatation of the bladder had relieved the frequency of micturition, which returned in a milder form one week after the X rays, but passed off in a few days. The patient said that she was much better, and there was a definite shrinkage in size of the tumour. The irritability of the bladder returned on May 26th, but was relieved by urinary sedatives. On May 31st and June 1st the deep X ray treatment was repeated, reversing the fields with the same factors. No disability followed the treatment other than the usual transient anæmia, which readily responded to hæmatinics, and a feeling of tiredness which lasted a few days.

On June 10th the patient thought that she was passing gas from the bladder. Another cystoscopy was done, and on the left upper lateral side of the bladder a small area of inflammation (1 cm.) was found, in the centre of which there was a pinhole fistula. There was no sign of any gas or any evidence of fæces in the urine or the bladder. Seen again later, the patient was in great distress, passing large quantities of gas, especially on micturition, which was accompanied by a whistling sound that could be heard at some distance and over which she had no control. It was decided to perform a colostomy to prevent the entrance of fæces into the bladder, and on June 16th the abdomen was opened and the growth was found lying on the left side of the bladder. The uterus was retroverted and atrophic. The left tube and ovary were fixed to the growth and œdematous, as also was the colon. The tumour was reduced one-third in size since first discovered, and also more mobile, and it was therefore decided to remove it. To do this it was necessary to remove more than a third of the bladder with it. The bladder was closed with three layers of sutures and muscle-splitting colostomy was done. A catheter was inserted in the cæcum for the introduction of saline, the abdomen closed, the pelvis drained, and a Poussin catheter inserted in the bladder. With the exception of a slight attack of phlebitis in the third week the patient made an uninterrupted recovery.

Dr. T. T. O'Farrell reported that the growth was a so-called colloid carcinoma, associated with a considerable amount of inflammation. Sections taken through an adherent piece of bladder showed much inflammation, but no carcinomatous element could be found in this piece of material. On Oct. 28th the patient reported that she was in excellent health. "All organs are acting normally, and the side appliance gives me very little trouble." She had gained a stone in weight and had completely lost her nervousness.

Mr. Meade explained that he had shown the specimen in the first place because of the difficulty of diagnosis. Even when the growth had been found the patient had given no definite symptoms of carcinoma. She had been constipated and had passed some mucus and blood, and had some pain over the left side of the abdomen, but she had been rather indefinite about them. The second reason for reporting the case was that the treatment by deep X rays had made it possible to operate on a tumour which was clinically inoperable. Thirdly, the fact that a growth involved the bladder and a fistula was present should evidently not deter the surgeon from operative interference.

Sir WILLIAM WHEELER read a paper on

Thrombo-angiitis Obliterans,

based on an experience of two cases, in one of which the diagnosis was certain, whilst in the other the absence of pathological examination made the differential diagnosis from Raynaud's disease difficult. In both cases, said Sir William Wheeler, the disease occurred in Irishmen who had served abroad. Those who had made this remarkable disease a special study insisted that it almost exclusively occurred in male adult Jews, especially those amongst the poorer class who had migrated from Russia. For no accountable reason an inflammatory condition arose in the deep arteries, and often in the veins, which after weeks, months, or years led to thrombosis and obliteration of the vessels, with disastrous consequences. The disease was presenile, non-syphilitic, and non-embolic.

CASE 1.—The patient was an officer who had served for some years in Egypt. The condition was acute, and the outstanding features of the case were typical—sudden pain in the muscles of the calf of the intermittent claudication variety, flushing of the foot in the dependent position, and an unbearable pain, associated with blanching of the foot when it was raised. All the vessels round the foot were pulseless. The age of the patient was 28. He was strong and athletic. From the time of the first sudden pain the circulation in the foot became more and more precarious until finally gangrene developed in the toes, accompanied by lymphangitis and infection, and it became necessary to amputate above the knee. The entire course of the disease, so far as symptoms were concerned, was three weeks. Examination of the vessels of the amputated limb showed occlusion of the popliteal artery one inch below the level of the amputation, and also characteristic changes in the vessels of the leg and foot. The deep veins were also thrombosed and to some extent calcified. An attempt at restoration of the circulation by canalisation was found by Dr. O'Farrell. Leriche's operation was tried, in addition to vigorous conservative treatment, but without effect.

CASE 2.—The other patient, who was shown at the meeting, had been under an anæsthetic 30 times, and had undergone about 40 operations within 10 years. The lower limbs and the upper limbs were affected. He had served in the Navy throughout the war, and was of fine physique. The disease was now quiescent, but the man had lost both lower limbs—one below and the other above the knee. The first finger of the right hand had gone and the tips of the fingers of both hands were involved. After the patient had suffered from numbness, blanching, and rubor, with intense pain, for four years, the great toes—first in one foot and then in the other—became gangrenous in 1919; from this time until the present he was in and out of hospital, having amputations performed now on one limb and now on another.

The outstanding features in the history of the two cases, said Sir William Wheeler, were that (1) neither was a Hebrew; (2) neither had syphilis; (3) both served abroad; (4) both were heavy cigarette smokers; (5) the chronic case lost portions of all four limbs over a period of ten years; (6) the acute case lost the left leg above the knee within three weeks of the first attack of pain in his calf; (7) both patients were strong, active men under 30 years of age. The disease never occurred in women. Cigarette smoking must be considered as a causative factor. The disease only occurs in inveterate smokers, and Weber had found several cases where the victims were employed in cigarette factories.

Dr. T. T. O'FARRELL showed a series of lantern slides illustrating the cases. He said that the trouble in Case 1 had started in the great toe, and had spread upwards. The tissues were œdematous, and there was some exudation of blood. The upper part of the popliteal artery was normal, but the lower part was thrombosed. Most of the arteries of the limbs showed fibrosis of the muscular coat, with the exception of the peroneal, and several of the veins showed commencing calcification. Attempts at canalisation of the clot were found here and there in the tibial vessels.

Mr. MAUNSELL said that he thought that smoking was now too common a thing to be attacked and put down as the possible cause of any disease. Both the patients described had been Irishmen, but they had both been abroad. This fact suggested to him that the condition might be due to microbial infection.

Mr. C. J. MACAULEY asked whether in Case 1 the possible diagnosis of Raynaud's disease and peripheral gangrene had been considered. He thought that possibly the disease might have originated from an embolus.

Mr. W. PEARSON referred to a case somewhat similar to those described by Sir William Wheeler.

The patient was a farm labourer, aged 38, who previously had been perfectly healthy, and had never been abroad; he never smoked cigarettes, but always a pipe. The gangrene was dry, but spreading rapidly, and affected the left limb. Mr. Pearson did a supracondyloid amputation, and the man had remained quite well ever since The Wassermann reaction had been negative, and there had been no sign of arterial disease elsewhere in the body.

Mr. MEADE referred to two cases of arterial gangrene which he had treated.

Sir WILLIAM WHEELER, in reply, said that in making the diagnosis embolism was discussed, but was not seriously entertained. In the first place, obstruction from an embolus might produce the symptoms described in a young man, but if the limb survived the first few days the collateral circulation would be rapidly established, and all anxiety would have disappeared within the first fortnight. As a matter of fact, the circulation in Case 2 became more precarious daily for three weeks, until gangrene finally appeared. In the second place, there was no discoverable lesion from which an embolus would come. The pathological examinations later proved the correctness of this point of view, and established the fact that a true thrombo-angiitis obliterans existed. Raynaud's disease was difficult to exclude as a possible explanation in Case 1. Nevertheless, Raynaud's disease commencing in the toes, in a strong man of 25 years of age, was exceptional, and the patient was the exact reverse of the type of individual in which the Raynaud syndrome was to be found. No pathological examinations were made, and he did not definitely exclude the possibility of Raynaud's disease. In Case 2 the diagnosis of thrombo-angiitis obliterans was certain. It was made before operation, and the pathological examinations were conclusive. He had had a fairly large experience of the Leriche operation. It produced many of the effects claimed, but the physiological reasoning on which the operation was based was open to criticism.

Mr. MAUNSELL showed a teratoma removed from the transverse colon of a girl of 17, and a specimen of

Diffuse Hæmangioma of the Liver.

The patient was a man, aged 26, who had come to hospital stating that two days previously, while at a fair, he had got weak, and had gone into a friend's house, where he became weaker and had abdominal pain. He was seen by a doctor, who thought he was suffering from perforation, possibly of a gastric ulcer. When seen by Mr. Maunsell he was absolutely blanched; the abdomen was distended, and seemed to have fluid in it. When it was opened this fluid was found to be pure blood. A bleeding point was looked for unsuccessfully, but the blood seemed to be coming down from the liver. Next day blood transfusion was done, and the patient did well. After a slow convalescence he was allowed up, but he never had a perfectly normal temperature. One day, while up, he again felt faint, and was put back to bed, and from that time onwards he ran a higher temperature. A radiograph showed that the diaphragm was higher on the right side than on the left; a needle was inserted, and bloody fluid found. A rib was then resected, and only blood escaped. A tube was inserted; the patient apparently bled internally and died.

LIVERPOOL MEDICAL INSTITUTION.

AT a meeting held on Nov. 25th Dr. H. S. PEMBERTON read a paper on

Arthritis Deformans: Its Ætiology and Treatment

in which he gave an account of investigations carried out by Dr. L. S. Ashcroft, Dr. L. Cunningham, Mr. T. P. McMurray and himself. After referring to the difficulty of diagnosing the condition from other forms of arthritis, with the exception of monoarticular and menopausal forms, which were included, Dr. Pemberton said, that 64 cases had been studied, from the clinical, the bacteriological, the metabolic, and the therapeutic standpoint. It had been found clinically that cardiovascular changes were relatively infrequent. Little or no change had been discovered in the rate of intestinal passage, nor was there any evidence of renal inefficiency. The degree of hepatic efficiency was doubtful as, although there had been no excess of urobilinuria, the blood-lævulose curves had indicated abnormality; sulphur excretion was definitely increased; 65 per cent. of the fractional test-meals had shown hypochlorhydria (50 per cent. of these being achlorhydria), and the glucose tolerance had been found impaired in practically every case. The basal metabolic rate varied very little. Dr. Pemberton showed illustrations comparing blood-glucose curves in arthritis with those in normal diabetes, and in pancreatic disease, and said that the latter were found to resemble most closely the curve in arthritis. He also showed pictures of bone and joint changes in diabetes mellitus. On the therapeutic side, he said, the aim had been to make good or counteract deficiencies which the investigation had shown to exist—i.e., deficient gastric secretion, diminished glucose tolerance, and increased sulphur loss. This had been done by giving as a routine: (1) large quantities of 0·4 per cent. pure hydrochloric acid; (2) a carbohydrate-free diet of low calorific value, increased later by the addition of more fats, proteins, and some of the 5 per cent. carbohydrate foods; (3) collosol sulphur; (4) massage and then exercises. Dr. Pemberton referred to the difficulty of taking a carbohydrate-free diet over a long period. By the results, which had proved very encouraging in some 60 to 70 per cent. of the cases, and sometimes within so short a period as three weeks, it was felt that such therapy was distinctly valuable.

Mr. C. O. DAVIES read a note on

Recurring Acute Intussusception

in which he described the main features of a case which had recently come under his care. A male child, 5 months old, was operated on twice within 12 weeks. On the first occasion an ileocæcal intussusception was reduced, whilst on the second there was an ileocolic invagination. From a study of 32 cases reported in the literature, Mr. Davies had reached the following conclusions: (1) recurrence of acute intussusception in childhood is rare, at the most amounting to less than 4 per cent. of cases; (2) the usual interval between the recurrences varies from two and a half to ten months, though he had met with a few cases in which the interval was as long as two years; (3) there does not appear to be any necessity for trying to prevent recurrence, nor is there any reliable method for doing so. He laid stress on the importance of warning parents that recurrence is possible, although unlikely, and urged the necessity for immediate reoperation.

CARDIFF MEDICAL SOCIETY.

A MEETING of this Society was held on Nov. 23rd, when Dr. ALFRED HOWELL took the chair and Mr. J. BERRY HAYCRAFT read a paper on the

Diagnosis and Treatment of Gastric and Duodenal Ulcers.

He described the routine method of examination of cases in the surgical unit, which consisted of clinical history, physical examination, X ray examination, fractional test-meal, examination of stools for occult blood, blood count of red cells, blood compatibility in case of transfusion, and Wassermann reaction. He laid stress on the importance of taking an accurate clinical history of the symptoms of the disease from its commencement, and described in detail the symptoms and methods of questioning the patients. A good history was the most important means of diagnosis. X ray examination should be conducted by the radiologist and the surgeon together, and screen examinations gave a better indication of the nature of the lesion than films. The fractional test-meal had been of value in confirming the diagnosis in only half the cases, but the detection of occult blood in the fæces had made it certain in many doubtful cases.

In considering what type of operation was of most value, Mr. Haycraft emphasised especially the need for early diagnosis, which, as a rule, rendered operation simpler and less dangerous. Speaking generally, duodenal ulcers and simple ulcers close to the pylorus could be cured by the operation of gastro-jejunostomy, but ulcers on the lesser curve and those adherent to the liver or pancreas required some form of excision or partial gastrectomy to get a satisfactory result

It was in these old-standing adherent cases that partial gastrectomy was often very difficult and the mortality was higher than that of gastro-jejunostomy, but by earlier diagnosis and treatment some of these more severe operations could be avoided. Sleeve resection was not a good operation unless combined with gastro-jejunostomy. Two cases of hour-glass stomach where gastrectomy was not feasible had done well with gastro-gastrostomy combined with gastro-jejunostomy. Careful pre-operative treatment was most important, particularly the rectal administration of glucose and, if necessary, one or more transfusions of blood. Similar measures were indicated to combat shock after operation.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

A MEETING of this Society was held on Dec. 8th, Prof. WILLIAM RUSSELL, the President, in the chair.

Mr. N. M. DOTT read a communication on a

Simple Method of Intestinal Anastomosis.

He had been led to adopt this method, he said, by its simplicity and its usefulness in otherwise awkward situations. It was founded on the technique of Eck's venous anastomoses and was applicable to lateral and end-to-side union, but not end-to-end anastomosis. In lateral union the two lines of viscera were laid together and the posterior seromuscular layer stitched in the usual manner, the proposed opening in each viscus then being outlined by an incision which divided the seromuscular layers and laid bare the submucous tissue. The cut posterior edges were firmly joined by sutures, anchoring the exposed mucous membrane, and including in the stitches blood-vessels of any size. The novelty of the method lay in the next step. A long needle, carrying No. 60 commercial linen thread, was passed through the exposed mucous membrane to the lumen at one end of one of the incisions; it was then passed along the lumen and brought out at the other end of the incision. Next this same needle was passed along the lumen of the other viscus in a similar way but in the opposite direction, and thus the two layers of mucous membrane which were to form a septum when anastomosis was complete were encircled by the thread. Next the anterior part of the incision was stitched up in the same way as the posterior, but the last stitch of the inverting seromuscular suture was left uncompleted. The linen thread was now used in the manner of the Gigli saw and the layers of the mucous membrane which it included were easily and rapidly divided and the continuity of the lumina thus established, after which the final stitch was completed.

The advantages of this method, said Mr. Dott, were (1) its relative asepsis; (2) the accurate apposition of the submucous surfaces; (3) it could be carried out in any reasonable situation; (4) clamps were not required, the only instruments needed being suture needles. Hæmostasis was assured since all the vessels except the capillaries of the inner surface of the mucous membrane were secured. By modifying the method end-to-side anastomosis could be carried out, though this necessitated open exposure of one end of gut and a controlling clamp. The method was exceptionally useful in ileocolic anastomoses where the colon was fixed and difficult to approach with clamps, and it minimised the danger of severe sepsis from a stagnant colon.

Mr. W. A. COCHRANE read a paper on

Backache from the Orthopædic Standpoint,

in which he began by discussing industrial injuries of the back. The first thing to be noted, he said, was that people might engage in industries for which they were physically unsuited. The slender, small, and delicate type of anatomical structure was inappropriate for bearing heavy weights. Secondly, back strain might arise during either light or heavy work in persons using their body at mechanical disadvantage. Incorrect bodily mechanics paved the way for strain of the dorso-lumbar, lumbo-sacral, and sacro-iliac regions. In the examination of cases a radiogram might show no evidence of an intrinsic lesion, and in such an event a detailed physical examination was of the first importance. It was wrong to take up the attitude that because X rays revealed nothing the patient could have nothing the matter. In point of fact, however, careful stereoscopic films would often supply the evidence sought for. A further problem which merited attention was that arising from the chance discovery, after radiography of the spine in cases of alleged trauma, of a definite lesion, such as osteoarthritis or compression fracture. In such cases the question of compensation might lead to endless argument in the midst of which the patient too often got no definite treatment. In considering the relationship of the common anatomical abnormalities in the lumbo-sacral and sacro-iliac regions to alleged injury, Mr. Cochrane took up the view that they were to be regarded as potentially contributory in the determination of the onset and persistence of symptoms. Malingering presented a difficult problem. Two factors must be discounted before concluding that the patient was malingering; first, his probable misconception of the ætiology of his condition, and secondly, his apprehension that, even in the genuinely painful back, he had no tangible and visible evidence to produce. Mr. Cochrane believed that as more was learnt about the proper methods for conducting a systematic routine examination it would be found that the real malingerer was not common.

The varieties of strain in the back, continued Mr. Cochrane, might suitably be classified as (1) acute traumatic; (2) general postural; (3) lumbo-sacral; (4) sacro-iliac; and (5) combined pelvic joint strain. In *acute traumatic strain* the lesion represented a rupture of muscular and aponeurotic fibres with all the phenomena of acute injury. These cases were capable of getting well if early treatment of heat, massage, and recumbency, followed by graduated exercises, was enforced. The late cases were due to the persistence of the muscle spasm and to myositis. They comprised the large number of such cases which were on compensation in industry. They could not be cured by perfunctory treatment. *General postural strain* was a condition of general muscular and ligamentous fatigue without definite localisation of symptoms. It occurred in slender individuals with poor postures who required adequate support and postural re-education. In *lumbo-sacral strain* the pain was localised to the lumbo-sacral region and sciatica was a frequent symptom. One form occurred in the heavy individual with relaxed abdomen. The clinical features of *sacro-iliac strain* were quite definite. Treatment was by a suitable support and postural re-education. In resistant cases manipulation under an anæsthetic was required, and in selected cases an arthrodesis operation. By *combined pelvic joint strain* was meant that in cases of semi-sacralisation of the fifth lumbar vertebra secondary strain of the sacro-iliac joint could and did occur.

In conclusion, Mr. Cochrane said that injury of the back was often only one factor in a compensation problem, and treatment must have regard to the other factors. To make diagnosis more accurate, a routine method of careful physical examination must be employed, based upon an appreciation of the anatomy and statics concerned. The chronic cases would continue to be unsatisfactory under present conditions since they have to be treated very largely as out-patients.

Dr. FREDERICK PORTER opened a discussion on the sphygmometer in general practice, which will be continued at a later meeting.

ROYAL INSTITUTION OF GREAT BRITAIN.—Afternoon lectures of the juvenile course will be given on Tuesday, Thursday, and Saturday of next week at 3 P.M., by Prof. A. V. Hill, F.R.S. The subject of the course is Nerves and Muscles: How We Feel and Move; and the titles of the lectures are Nerves and the Messages they Carry (Dec. 28th); Muscles and How they Move (Dec. 30th); and the Heart and Some Other Muscles (Jan. 1st). The address of the Royal Institution is 21, Albemarle-street, London, W. 1.

Reviews and Notices of Books.

THE RESPIRATORY FUNCTION OF THE BLOOD.

Part I. *Lessons from High Altitudes.* By J. BARCROFT. Cambridge University Press. Pp. 207. 12*s.* 6*d.*

A REVISION of Prof. Barcroft's well-known book "The Respiratory Function of the Blood," being found impossible owing to the rapid advance of knowledge in that particular line of research, it has been decided by the author to present the subject matter in the revised form of a series of publications of which the first is entitled Lessons from High Altitudes. The book is largely coloured by the experiences of Prof. Barcroft and his colleagues in their famous expedition to Cerro de Pasco.

We learn that the first causative factor in the production of the symptoms and signs of mountain sickness is oxygen-want by the medulla—that is to say, a discrepancy between the oxygen supplied to and demanded by this tissue. The interpretation of the accelerating influence of exercise, meals, and cold on the production of this symptom-complex is thus facilitated and simplified. A comparative study of the suitability or adaptability of various geographical districts to the investigation of the physiological effects of high altitudes leads the author to the conclusion that Cerro for the time being holds the palm. And this for several reasons—namely, the possibility of rising to this height (14,200 feet) in a day, the accessibility of higher regions, the presence of all the amenities of civilisation, and lastly, though of great importance, the fact that the district is inhabited by an indigenous population. We learn that this little people—the "Cholos"—with their clubbed fingers and chests relatively broader than ours, are a race endowed with the quality of remarkable physical endurance. In spite of the race having lived for centuries, however, at this altitude, the oxygen saturation of their arterial blood was obviously low, and at no time was any evidence obtained which militated against the view that the oxygen of the mixed arterial blood was in approximate diffusion equilibrium with that of the alveolar air. At high altitudes, after acclimatisation, the oxygen-content of the arterial blood was increased for two reasons, first that the hæmoglobin-content was increased, and secondly that the oxygen dissociation curve was shifted to the left, so that for a given alveolar oxygen pressure the oxygen-content was higher than that of a blood containing the same amount of pigment and following the normal sea-level dissociation curve. The increased oxygen-content of the arterial blood leads, of course, to an increased oxygen-content of the venous blood, provided that the oxygen consumption is the same on the mountains as at sea-level. The mean oxygen pressure in the capillaries is thus raised, and this rise is probably an important factor in producing the phenomena of acclimatisation. Prof. Barcroft stresses the point that the real essence of acclimatisation is a redistribution of disadvantages over the whole body, so that the acute effects of oxygen-want, manifesting themselves in the symptomatology of mountain sickness, gradually disappear as the initial strain becomes divided between the many organic functions on which the well-being of the individual depends.

Authoritative accounts of research seldom fail to hold the attention of the reader. Here a fine imagination is curbed by rigorous experimental test, and the clarity with which problems are presented, grappled with, conquered, or left unsolved, marks this book as a classic of scientific thought and accomplishment.

X RAY DIAGNOSIS.

By MAGNUS REDDING, F.R.C.S., Senior Surgical Radiologist, Guy's Hospital. London: Cassell and Co., Ltd. 1926. Pp. 228. 21*s.*

IN this book we have an outline of radio-diagnosis—straightforward, well balanced, and well illustrated. It is reasonable in size and price and is written by a radiologist of wide experience. The whole range of radio-diagnosis is covered, and the author has avoided unduly stressing any of those special methods which have their vogue but eventually find but an unimportant place in diagnostic methods. Radiological knowledge has now become so extensive that a book of this character must perforce omit much; perhaps more than a single paragraph might have been given to such important subjects as pleurisy and gastric ulcer, even in so brief an account of chest and gastro-intestinal work as has been included. Bone work is more exhaustively discussed than any of the other sections. There are one or two small errors which will, no doubt, be corrected in the second edition, as, for instance, the statement on page 106 that the left side of the diaphragm is one and a half inches higher than the right. We doubt also if the pathology of Köhler's disease given would be generally accepted. The description of the accessory bones of the foot would be much helped by line drawings of the various ossicles.

As a text-book for students this volume will rank among the best yet published in this country, and can be warmly commended to all students of the subject. We wish it every success.

CLINICAL EXAMINATION OF THE NERVOUS SYSTEM.

Third edition. By G. H. MONRAD-KROHN, M.D. Oslo, M.R.C.P. Lond., Professor of Medicine in the Royal Frederick Hospital, Oslo. With a foreword by T. GRAINGER STEWART, M.D., F.R.C.P., Physician to the National Hospital, Queen-square, &c. London: H. K. Lewis and Co. 1926. Pp. 201. 7*s.* 6*d.*

PREVIOUS editions of this practical compendium of neurological examinational methods have been commended to the student and practitioner and its usefulness is likely to be increased by its appearance in a third issue. The elements of diagnosis naturally creep in as the book gets larger, which is all to the good. Of convenient pocket size and well illustrated, it is a vade-mecum of an acceptable kind.

THE MAYO CLINIC PAPERS.

Collected Papers of the Mayo Clinic and the Mayo Foundation. Edited by Mrs. M. H. MELLISH, H. BURTON LOGIE, M.D., and CHARLOTTE E. EIGEN MANN, B.A. Vol. XVII. (1925). London: W. B. Saunders Company, Ltd. 1926. Pp. 1078. 60*s.*

THE seventeenth volume of the Mayo Clinic papers maintains the reputation of its predecessors. It contains over 1000 pages and the variety of subjects dealt with is bewildering. Many of the contributions are given by title only and others in the form of short extracts. The general reader might have been grateful if more restraint in the reprinting of articles had been exercised; all the contributions have been already printed elsewhere, so that a very short abstract with a reference to the source would, in many instances, be adequate. A volume of a more manageable size would result, and it would contain the cream of the output of one of the most progressive clinics in the world. Such criticism savours, however, of ingratitude, for the preface claims that this result has already been attained. There could in any case be no better mirror of the progress of surgical science than the Mayo Clinic volumes. Each department of the clinic keeps itself informed of what is being done elsewhere, and every new suggestion is put to the test on a scale and with a thoroughness which cannot be matched in many clinics, at any rate in this country. The subjects dealt with include the diagnosis and treatment of gastric and duodenal ulceration, which still exercises the minds and fingers of surgeons in all countries; the functions of the liver and gall-bladder with special reference to cholecystography and operations upon jaundiced patients; ulcerative colitis, its ætiology and treatment; the treatment of patients with urinary obstruction; the functions of

the thyroid gland; the surgical treatment of disorders of the circulatory system; the relation of the spleen to purpura hæmorrhagica; and the treatment of various forms of carcinoma with radium emanations.

The scale upon which it works enables the Mayo Clinics to embody in its publications the results of the investigation and treatment of unusually large numbers of cases of any one disease. This present volume contains studies of 1000 cases of carcinoma of the prostate, of 15 verified cases of primary carcinoma of the duodenum, and of 30 cases of proved tuberculosis of the pleura.

It is obvious that a brief survey can give only an inadequate idea of the material that the Mayo Clinic volume puts at the service of its readers.

THE NEW BIOLOGY.

Essays in Popular Science. By JULIAN HUXLEY. London: Chatto and Windus. 1926. Pp. 307. With 6 plates and 20 text figures. 16*s*.

Prof. Huxley need not apologise for books like this. It is in every way desirable that the advances which have been made in experimental zoology in the last 20 years should be made available in a form tolerably easy to assimilate, on the one hand for the general educated public and on the other for those who practise applied biology in its special relations to medicine. Every medical man who has been qualified ten years or more, and has read no zoology since, might read with advantage "The Tadpole: a Study in Developmental Physiology," the longest and best chapter, and "The Frog and Biology," which is the next longest and almost as good. The other 16 essays are all readable, but they are less instructive and some of them are frankly trivial; the one headed "Why do more boy babies die than girls?" is either frivolous or an illustration of how the most modern geneticists can comfort themselves by juggling with words. In "Thomas Henry Huxley and Religion" the grandson gets out of his depth, though the pellucid stateliness of the illustrative quotations which he gives is refreshing. It would have been well if the two versions (pp. 31, 276) of the effect of nerve section on the orderly reconstitution of tendons had been concordant. But for all these criticisms the volume is to be welcomed, and we hope that Prof. Huxley will follow up this second collection with a third and a fourth as occasion arises; the more medicine can assimilate the progress of biology the more it will advance itself.

MINERVA.

Jahrbuch der gelehrten Welt. Edited by Dr. GERHARD LÜDTKE, with the assistance of Dr. FRITZ EPSTEIN. 28th issue. Berlin and Leipzig: Walter de Gruyter and Co. 1926. In three volumes. Pp. 2714. Mk.80, bound in linen.

THE twenty-eighth issue of this renowned year book appeared in May, but did not reach us until later in the year, and we have kept it awhile in daily use before comment. It is a compendious work of reference of singular accuracy. First appearing in 1891 as a Year Book of the Universities of the World, with the definite idea of strengthening the bond between the intellectual élite throughout the civilised world, it has grown year by year until it has become a guide to the seats of learning of all kinds. The 1891–92 issue contained 360 pages, about 6 inches by 4, within a single cover; the present issue consists of two volumes comprising 2362 pages, about 8 inches by 5½, with a separate index volume containing at a rough estimate 65,000 names. To take an example: the section dealing with London, England (London, Canada, has a separate entry), opens with the teaching schools, beginning with the University, of which the names of professors and readers are given, followed by details of staffs, libraries, and museums of University and King's Colleges. Four pages are allotted to the medical schools of the University, with the officers of the hospitals and the teachers in the schools set out in type so well chosen and arranged that there is no work of reference in which they are easier to find. There follows an alphabetical list of medical foundations, including the Medical Research Council, the Institutes of Hygiene and Public Health, and so forth, the information in each case having been brought up to Easter of the current year, unless an asterisk calls attention to the fact that the entries are of older date. Other faculties are dealt with in like manner, and there is a complete list of Fellows of the Royal Society, with their dates and subjects. The data for Paris, Montreal, or Tokio are as accurate as those for London, and for this edition special pains have been taken to complete the academic data for South America and Eastern Asia. We can testify from personal experience that the misprints in this vast collection of exact material are few, and the errors trifling. There are, for instance, not two Kews, one at Richmond and one near London, as the geographical index (p. 2368) would imply, and the Maudsley Hospital (p. 1108) should be spelt with a u and not with an n. Moreover, we fail to find in this, as in every other work of reference, the initials of Prof. Wieland, of Heidelberg (perhaps he has none). To mention these minutiæ is but to call attention to the wonderful accuracy of the work as a whole, which is a monument to the care and diligence of its compilers. Dr. Fritz Epstein, who has been responsible for this and the previous edition, is now retiring in favour of Dr. Friedrich Richter, the book being produced under the general editorship of Dr. Gerhard Lüdtke, to all of whom the learned world which they have so carefully indexed owes a debt of gratitude.

WINE AND THE WINE LANDS OF THE WORLD.

By FRANK HEDGES BUTLER. London: T. Fisher Unwin, Ltd. 1926. Pp. 271. 15*s*.

Mr. Frank Hedges Butler, well known in the aeronautic world, whose name is a guarantee for his intimate knowledge of wine, has written a pleasantly discursive book from which the reader can obtain a general knowledge of the wine industry, as well as much special detail, the written pages being fully supplemented by well-chosen illustrations. There is accurate information in many other books upon the wines of France, while their official classification is ancient reading to all who know anything of the subject, and here Mr. Butler's notes on the various growths follow familiar lines. But many readers will like to have his critical reasons to support their preferences, and what he terms a "glossarial essay in the natural history of wine" will be useful to them; for an exact appreciation of the language of wine is necessary when judges are attempting to arrive at accurate conclusions as to the qualities of the particular vintage or growth. Less familiar ground is covered in the discursive chapters dealing with the wines of Russia, Kashmir, North and South Africa, Australia, and the Argentine, which contain matter that will be novel to many, while amusing chapters are added dealing with drinking songs, fashion in wine, and the arrangement of a complete wine service in the elaborate menu. The author concludes with a dated record of the vintages of the twentieth century, which should assist in the making of a cellar, whether for the individual taste or for consumption in clubs and hotels.

VICTORIAN JOTTINGS FROM AN OLD COMMON PLACE BOOK.

By Sir JAMES CRICHTON-BROWNE, M.D., LL.D., F.R.S. London: Etchells and Macdonald. 1926. Pp. 344. 15*s*.

THE key-note of this work is struck by the frontispiece which its author has with happy foresight selected, for it is the portrait of himself, by "Spy," of Vanity Fair, a portrait which is, we have always thought, one of "Spy's" most happy efforts in the academic world, ranking with the drawings of Dr. George Brodrick, the Warden of Merton, and Dr. Goodford, the famous Provost of Eton.

Sir James Crichton-Browne's book is, as he prefaces, "a mere medley, atoms without cohesion or con-

cinnity," but is none the less delightful. His reminiscences begin with a charming picture of his early home in Edinburgh, the house of his grandfather, where he could pick ripe Jargonelle pears out of his bedroom window. Thereafter follow stories and episodes dealing with all sorts and conditions of men—the clergy, the services, lawyers, medical men, tradespeople, countryside folk, and lunatics—all happily remembered and almost always with some reason for their recording. It is not proposed to spoil the book for readers, and perhaps the presentation of the stories, by reproducing them, but there are one or two for which we must thank the author. There is a story related by Sir Spencer Robinson as to an answer given in an examination at Greenwich for naval lieutenants qualifying for special branches, which should not be missed. The episode forms one more instance of how little room there is for a sense of humour in the corporate proceedings of examining boards—Sir Spencer Robinson wished to pass the audacious and lively candidate, but his fellow examiners would have none of him, and no other issue could have been expected. A pleasing anecdote, again, is that which concerns the captain of a merchant ship who had occasion to enter in the log "The chief mate is very drunk to-day." On the mate expostulating, he was informed that nothing could be deleted from the log, and that the entry was a matter of fact. Some days later, the captain being on shore all day, the mate entered up the log, and among the entries put "The captain is sober to-day"—also a record of fact which could not be deleted. And the pecuniary estimate of a young woman of the advantages of education, is, in the language she would have used, "quite priceless." There are a few medical memoranda, but as a rule the author confines himself to social and political matters.

We have read the book with great pleasure, and hope that there will be issued a second set of reminiscences, and that a further edition of the present instalment will be called for and give an opportunity for more careful revision of the proofs; for we must allude to an extraordinary number of mistakes in the spelling of proper names both in the text and the index. Where the point of a story depends upon the personalities it is inconvenient that the references should be made doubtful. On p. 7 the name "Greig" should read "Gleig"; on p. 141 "Meymont" Tidy should read "Meymott" Tidy; on p. 180 "Packington" should read "Pakington"; on p. 254 G. "Broughton" R.A., should read "Boughton"; on p. 316 "Muygbridge" should read "Muybridge." On p. 126 "Cantlie" appears twice over as "Cantile." On p. 288 a very well-known line from Tennyson's beautiful song is printed as "Rose, a nurse of ninety years," thus acquainting the readers with the nurse's Christian name. It is interesting to see that this nonsensical reading has persisted for many years, for it is an old joke that a juvenile writer of hexameters translated the passage as "Rosa nomine nutrix"; according to that story the school-boy earned commendation for an ingenious variant reading, but it seems now likely that he was translating literally a printer's error. Another amusing combination of wrong punctuation and bad grammar appears on p. 300 in a learned and interesting paragraph on the Erection of Hair, where the printer has made a hash of the striking and apposite passage from Virgil. On p. 305 the author refers to the "Ballad of Miss Bayley," which he says he has not heard since he was 5 years old, when a nursemaid used to sing it to him. He will find it on p. 92 of "An Anthology of Humorous Verse," edited by Sir Theodore Cook; it begins "A captain bold of Halifax, who lived in country quarters—" the metre, rare in English, is common in Romaic folk ballads—but it continues in a manner that makes one imagine the nursemaid to have been an emancipated young lady.

A capital book, whose accomplished author, we are sure, will not resent the suggestion that in future issues slips should be remedied.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

A MEETING of the President and General Council of King Edward's Hospital Fund for London, for the purpose of awarding grants to the hospitals and convalescent homes for the present year, was held at St. James's Palace on Dec. 14th, His Royal Highness the Prince of Wales being in the chair.

The Financial Statement.

Lord Revelstoke (the hon. treasurer) said that at the November meeting the Council decided that the ordinary distribution should be maintained at £245,000, the amount to which it was increased last year. In addition, the grants during the year out of the legacies of Mr. and Mrs. Wells amounted to a further £39,750. The two distributions together, therefore, represented a total of £284,750. The ordinary distribution of £245,000 was arrived at by taking the whole of the income for the year, estimated at £236,000, and by adding to this amount the undistributed surplus of last year, which amounted to almost exactly £9000. Taking the two years together the amount distributed would be practically balanced by the total derived from the two sources indicated. It followed, therefore, that the income for 1926 was less than that for 1925 to the extent of about £18,000. This diminution was mainly due to a decrease from £19,549 to £3590 in the amount received in respect of legacies. The British Charities Association had contributed to the Fund the sum of £15,000 this year, as against £20,000 last year. On the other hand, the Fund had received this year £27,300 by way of donations as against £22,829 in 1925, the increase being mainly attributable to a munificent gift of £10,000 from Mr. Albert Searle, and to one of £7000 from an anonymous donor who had supported the Fund on more than one previous occasion. The grants of £39,750 made from the Wells legacies increased the total distributed from that source, to date, to the sum of £177,750.

League of Mercy.

Sir William Collins, in making his annual statement on behalf of the League of Mercy, said that some districts showed a falling off, but it was hoped that those showing an increase would counter-balance this. The falling off was attributed in some districts to the coal dispute, and in others to the competition of contributory schemes and to the practice of asking payment from patients. This year the British Charities Association had handed in £5000 for distribution to voluntary hospitals in almost every county in England and in Northern Ireland. He was able to recommend that the sum of £15,000 should again be handed over to the King's Fund, making a total of £398,034 contributed by the League to the King's Fund. The grand total of distribution for voluntary hospitals in London and outside by the League in 27 years was £485,368.

Grants to Hospitals and Convalescent Homes.

The Vice-Chairman of the Distribution Committee (Sir John Rose Bradford, P.R.C.P.) presented the report of the committee on the distribution to hospitals (including recovery and convalescent branches), and moved the adoption of the recommendations. The report stated that the number of hospitals applying for grants was 136, as against 133 in 1925, new applications having been received from the Hostel of St. Luke, the Ormond Maternity Home, and St. Paul's Hospital for Skin. Further progress was made during 1925 by the hospitals, taken as a whole, towards the re-establishment of their financial position. The number of hospitals showing deficits for the year had been again reduced, and, though the aggregate surplus was smaller than for the year 1924, this was due less to legacies and more to the results of successful special appeals for voluntary

contributions. The number of available beds had been increased and numerous fresh extension schemes had been undertaken. The total grants towards extensions and improvements amounted to £35,475, as against £28,925 in 1925, and that £207,525 would be distributed in grants to maintenance, as compared with £214,075 in 1925. These figures were in addition to £39,750 in grants to schemes of capital expenditure out of the special distribution of the legacies of the late Mr. and Mrs. Wells. When all the extension schemes which were now being actively promoted by the hospitals in London had been completed the number of available beds would be 1632 more than it was on Dec. 31st, 1925. The schemes that had come before the King's Fund also included the provision of improved out-patient departments, additional nurses' accommodation, and other structural work that does not add to the number of beds available for patients.

Lord Somerleyton (hon. secretary) presented the schedule containing the list of awards to hospitals (including recovery and convalescent branches) as follows :—

*List of Awards.**

	£
Acton Hospital (of which £250 on deficit on extension, in accordance with the scheme submitted to the Fund)	950
All Saints' Hospital	75
Babies' Hospital (Deptford Fund)	25
Baby Clinic Hospital (Kensington)	50
Beckenham Cottage Hospital	400
Belgrave Hospital for Children (of which £500 to deficit on new nurses' accommodation)	1,800
Blackheath and Charlton Hospital (of which £50 towards improvements)	250
Bolingbroke Hospital (of which £750 towards erection of new ward block)	2,100
Brentford Cottage Hospital (of which £500 towards rebuilding and extension on new site)	525
British Hospital for Mothers and Babies, Woolwich	500
Bromley Cottage Hospital	150
Carshalton and District Hospital (of which £100 towards scheme)	200
Central London Ophthalmic Hospital	500
Central London Throat, Nose and Ear Hospital	150
Charing Cross Hospital (of which £2,000 towards acquisition of adjoining building and its adaptation as an extension of the hospital)	6,000
Chelsea Hospital for Women (including Convalescent Home at St. Leonards)	925
Cheyne Hospital for Children (including Country Branch at St. Nicholas-at-Wade) (of which £250 to deficit on increased accommodation for artificial sunlight treatment and other improvements)	600
City of London Hospital for Diseases of the Heart and Lungs (Victoria Park) (including Convalescent Home at Saunderton) (of which £500 towards new surgical block)	4,100
City of London Maternity Hospital (of which £500 towards new nurses' accommodation)	1,500
Clapham Maternity Hospital	300
Dreadnought Hospital (Seamen's) (including Albert Dock Hospital, Hospital for Tropical Diseases, Sanatorium at Liphook, and Convalescent Home at Cudham) (of which £50 towards provision for artificial sunlight at the sanatorium at Liphook)	2,100
East End Mothers' Lying-in Home (of which £500 to deficit on acquisition of adjoining building and its adaptation for nurses' quarters)	1,100
East Ham Hospital (of which £1,000 towards rebuilding as general hospital)	1,175
East London Hospital for Children (including Convalescent Home at Bognor) (of which £250 to reduce debt)	3,240
Elizabeth Garrett Anderson Hospital (including Recovery Branch at Barnet) (of which £1,000 towards extension)	2,725
Eltham and Mottingham Cottage Hospital	25
Enfield War Memorial Hospital (of which £100 towards improved X ray accommodation)	400
Evelina Hospital	1,000
Finchley Memorial Hospital (of which £250 towards provision of casualty wards)	550
Florence Nightingale Hospital for Gentlewomen	350
Forest Hospital, Buckhurst Hill	200
French Hospital	350
General Lying-in Hospital	600
German Hospital	350
Gordon Hospital for Fistula	50
Grosvenor Hospital for Women (of which £250 towards provision of accommodation for resident medical officer and for nurses)	750
Guy's Hospital (of which £1,500 to deficit on recent improvements)	11,500
Hampstead General and North-West London Hospital (of which £200 to deficit on recent improvements)	2,700
Hanwell Cottage Hospital (of which £25 towards improvements)	75
Hendon Cottage Hospital (of which £50 towards X ray room and sterilising room)	350
Hornsey Cottage Hospital	150
Hospital for Consumption, Brompton (including Sanatorium at Frimley (of which £250 towards removal of X ray department from basement)	1,250
Hospital for Diseases of the Throat	200
Hospital for Epilepsy and Paralysis (of which £250 towards extension of in-patient department)	2,000
Hospital for Sick Children	4,000
Hospital for Women (Soho-square)	850
Hospital of St. John and St. Elizabeth	750
Hostel of St. Luke	200
Ilford Emergency Hospital (of which £1,000 towards extension)	1,400
Infants Hospital	350
Invalid and Crippled Children's Society Hospital (Canning Town) (of which £250 towards extension of out-patient department)	700
Italian Hospital	100
Jewish Maternity Home	25
Kensington, Fulham, and Chelsea General Hospital (of which £500 towards rebuilding and extension)	600
King Edward Memorial Hospital (Ealing) (of which £1,000 towards extension)	1,400
King Edward VII.'s Hospital for Officers	250
King's College Hospital	7,500
Kingston-upon-Thames Victoria Hospital	100
London Fever Hospital	500
London Homœopathic Hospital (of which £200 towards improvements to hospital)	1,700
London Hospital (including Recovery Branch at Reigate) (of which £1,000 towards improvements)	15,625
London Jewish Hospital (of which £500 towards extension, in accordance with the scheme submitted to the Fund)	750
London Lock Hospital (of which £500 to maintenance of Harrow road hospital and £100 to maintenance of Dean-street hospital, and £500 towards the building of an extension of the out-patient department at Dean-street)	1,100
London Temperance Hospital (of which £250 to reduction of debt)	2,000
Maternity Charity and District Nurses' Home (Plaistow) (to the hospital : of which £200 to deficit on rebuilding and extension)	700
Medical Mission of the Good Shepherd, Babies' Home (Hoxton)	25
Metropolitan Ear, Nose and Throat Hospital	25
Metropolitan Hospital (of which £1,500 towards new nurses' home)	5,500
Middlesex Hospital (including Convalescent Home at Clacton) (of which £2,000 towards reconstruction	9,125
Middlesex Hospital Cancer Charity	1,000
Mildmay Memorial Hospital	400
Mildmay Mission Hospital (of which £500 towards nurses' home)	1,500
Miller General Hospital for South-East London (including Convalescent Home at Bexhill) (of which £1,500 towards extension)	4,575
Mothers' Hospital of the Salvation Army (of which £250 to deficit on extension)	800
Mount Vernon Hospital (Fitzroy-square and Northwood) (of which £500 towards extension)	1,500
National Hospital, Queen-square (including Convalescent Home at Finchley)	3,250
National Hospital for Diseases of the Heart (of which £400 to deficit on extension of out-patient department)	700
Nelson Hospital (South Wimbledon) (of which £250 towards provision of maternity block)	950
Northcourt Hospital and Home for Sick Children (Hampstead) (in consideration of the fact that curable cases are admitted)	100
North Islington Infant Welfare Wards	50
Norwood and District Cottage Hospital	425
Ormond House Maternity Home	15
Paddington Green Children's Hospital (including Convalescent Home at Slough)	1,075
Passmore Edwards Hospital for Wood Green, &c.	100
Phillips Memorial Homœopathic Hospital, Bromley	20
Poplar Hospital for Accidents (including Convalescent Home at Walton-on-the-Naze) (of which £250 towards provision of children's ward)	475
Prince of Wales's General Hospital (including Convalescent Home at Nazeing) (of which £500 to reduce debt)	5,350
Princess Louise Kensington Hospital for Children (formerly Kensington Dispensary and Children's Hospital) (of which £250 towards building of new hospital)	275
Queen Charlotte's Maternity Hospital	1,500
Queen Mary's Hospital for the East End (including Convalescent Home at Theydon Bois) (of which £1,000 towards new casualty block)	4,650
Queen's Hospital for Children (including Convalescent Home at Bexhill) (of which £250 to reduce debt and £200 towards additional nurses' accommodation)	4,175
Royal Dental Hospital of London	250
Royal Eye Hospital	700
Royal Free Hospital (of which £500 to reduce debt)	5,500
Royal Hospital (Richmond)	900
Royal London Ophthalmic Hospital (of which £250 to reduce debt)	3,000

* The Distribution Committee draw attention to the fact that it must not be assumed that the reduction or absence of a grant implies dissatisfaction.

	£
Royal National Orthopædic Hospital (including Country Branch at Stanmore (of which £1,000 towards extension of country branch)	5,000
Royal Northern Hospital (including Royal Chest Branch in City-road, Recovery Branch at Southgate, and Convalescent Home at Clacton) (of which £500 to reduce debt and £250 towards improved X ray accommodation)	8,450
Royal Waterloo Hospital for Children and Women (of which £750 towards new nurses' accommodation)	3,250
Royal Westminster Ophthalmic Hospital (of which £1,000 towards removal and extension)	1,500
St. Andrew's Hospital (Dollis Hill) (of which £300 towards new nurses' home)	575
St. Bartholomew's Hospital (of which £1,000 towards new nurses' accommodation)	7,000
St. Columba's Hospital (of which £100 towards new lift)	400
St. George's Hospital (including Recovery and Convalescent Branch at Wimbledon)	7,050
St. John's Hospital (Lewisham)	1,000
St. John's Hospital (Twickenham)	100
St. John's Hospital for Diseases of the Skin	300
St. Luke's Hospital for Advanced Cases (of which £100 towards extension of nurses' accommodation)	425
St. Mark's Hospital (of which £500 towards extension)	800
St. Mary's Hospital (of which £1,000 towards extension)	6,500
St. Mary's Hospital for Women and Children (Plaistow) (of which £250 to deficit on new nurses' home)	2,000
St. Monica's Home Hospital	100
St. Paul's Hospital for Skin	25
St. Peter's Hospital for Stone (of which £250 towards extension)	600
St. Saviour's Hospital for Ladies of Limited Means (Osnaburgh-street) (of which £250 towards improvements)	375
St. Thomas's Hospital (of which £500 towards diet kitchen and extension of X ray department)	10,500
Samaritan Free Hospital for Women (including Convalescent Home at Amersham)	1,350
Santa Claus Home	75
Seamen's Hospital Society (*see* Dreadnought Hospital)	
South-Eastern Hospital for Children (Sydenham) (of which £500 to deficit on new nurses' home)	1,250
South London Hospital for Women (of which £750 towards new out-patient department)	1,750
Stoke Newington Home Hospital for Women	75
Streatham Babies' Hospital	25
University College Hospital (of which £500 to reduce debt)	8,000
Victoria Cottage Hospital (Barnet)	100
Victoria Hospital for Children (including Convalescent Home at Broadstairs)	2,700
Walthamstow, Wanstead, and Leyton Children's and General Hospital (of which £750 towards extension)	1,650
Weir Hospital, Balham	100
West End Hospital for Nervous Diseases	1,500
Western Ophthalmic Hospital	300
West London Hospital (of which £750 towards additional nurses' accommodation)	6,250
Westminster Hospital (of which £750 to reduce debt)	5,900
Willesden General Hospital	1,800
Wimbledon Hospital (of which £250 towards provision of children's ward)	650
Winifred House Invalid Children's Convalescent Hospital Home	25
Woodford Jubilee Hospital (of which £150 towards extension)	225
Woolwich and Plumstead Cottage Hospital	25
	£242,500
SPECIAL GRANT.	
Woolwich and District War Memorial Hospital Building Fund (towards provision of general hospital)	500
Total	£243,000

Lord Marshall having seconded, the motion was put and carried unanimously.

Distribution to Convalescent Homes.

Sir John Rose Bradford then presented the report of the committee on the distribution to convalescent homes not attached to particular hospitals, which stated that the number of applications eligible for consideration amounted to 44, as compared with 42 last year.

Major Harold Wernher (hon. secretary) presented the schedule containing the list of awards as follows:

	£
All Saints' Convalescent Hospital (Eastbourne)	175
All Saints' Convalescent Home (St. Leonards)	25
Baldwin Brown Convalescent Home (Herne Bay)	25
Beau Site Convalescent Home (Hastings)	25
Brentwood Convalescent Home for London Children (Brentwood)	25
Bushey and Bushey Heath Children's Convalescent Home (Bushey)	25
Children's Convalescent Home (Beaconsfield)	25
Children's Cottage Hospital (Cold Ash, Newbury) (in consideration of the fact that convalescent cases are admitted)	25
Children's Home Hospital (Barnet) (in consideration of the fact that convalescent cases are admitted)	25
Convalescent Home for Poor Children (St. Leonards)	75
Convalescent Police Seaside Home (Hove)	75
Friendly Societies' Convalescent Home (Herne Bay)	25
Home for Invalid Children (Brighton)	50
Invalid Children's Aid Association Homes—	
Brooklands Home (Worthing)	50
Clevedon Sanatorium (Broadstairs)	50
Convalescent Home for Children (Hawkenbury, Tunbridge Wells)	25
Countess Brownlow Home (near Berkhamsted)	25
Edgar Lee Home (Willesden)	50
Florence Emma Home (Dover)	25
Hamilton House (Seaford)	50
Kurandai Home (Hartfield, Sussex)	75
London and Ascot Priory Convalescent Home (Bracknell)	75
London and Brighton Female Convalescent Home (Brighton)	50
London Homœopathic Convalescent Home (Eastbourne)	25
Mental After-Care Association Homes (Fairlight)	150
Metropolitan Convalescent Institution (Bexhill, Broadstairs (Children) and Walton)	100
National Sunday School Union Convalescent Home (Clacton)	50
Ranyard Mission Convalescent Home (St. Leonards)	40
St. Andrew's Convalescent Home (Folkestone)	75
St. Andrew's Convalescent Hospital (Clewer)	50
St. John's Home (Kemp Town, Brighton)	50
St. Luke's Home (Children) (Woodley, Reading) (in consideration of the fact that convalescent cases are admitted)	25
St. Mary's Convalescent Home (Birchington (in consideration of the fact that convalescent cases are admitted)	50
St. Michael's Convalescent Home (Westgate)	50
Seaside Convalescent Hospital (Seaford)	50
Suffolk Convalescent Home (Felixstowe)	50
Sunshine Convalescent Home for Children (Felpham, Bognor)	10
Surgical Home for Boys (Banstead) (in consideration of the fact that convalescent cases are admitted)	25
Tilford Convalescent Home for Children (Farnham)	50
Victoria Home for Invalid Children (Margate) (in consideration of the fact that convalescent cases are admitted)	25
Total	£2,000

The motion, having been seconded by Dr. Louisa Garrett Anderson, was then put and carried unanimously.

On the motion of the Governor of the Bank of England (the Right Hon. Montagu C. Norman), seconded by the Chairman of the London County Council (Sir George Hume, M.P.), it was resolved that the cheques for the grants should be posted immediately.

Wells Legacies Distribution: List of Grants to December, 1926.

Sir John Rose Bradford then presented the report of the committee on the special distribution to hospitals out of the Wells legacies to date, in aid of extensions and improvements. This stated that the schemes assisted by these grants for the year 1926 would provide approximately 420 additional beds, of which 51 would be reserved for accident cases, besides any that might be so reserved at Charing Cross. As 93 accident beds were included in the schemes assisted out of the Wells legacies distributions in 1924 and 1925, and 32 in schemes provided by hospitals with funds from other sources, the total increase in accident accommodation since the publication of the report of the Ambulance Cases Disposal Committee of the King's Fund amounted to at least 176.

Major Wernher (hon. secretary) presented the schedule containing the list of awards to hospitals out of the Wells legacies for the year, in aid of extensions and improvements, as follows:—

Charing Cross Hospital.—£5000 towards scheme of extension.

East Ham Hospital.—£5000 towards rebuilding.

Elizabeth Garrett Anderson Hospital.—£2000 towards first stage of extension, increasing the number of beds from 75 to 100.

Finchley Memorial Hospital.—£500 towards new casualty wards of 8 beds, increasing the number of beds from 47 to 55.

Ilford Emergency Hospital.—£2000 towards extension, increasing the number of beds from 62 to 100.

Kensington, Fulham and Chelsea General Hospital.—£1500 towards the first stage of the rebuilding scheme, providing 44 beds instead of the present 19.

Mildmay Mission Hospital.—£500 towards additional nurses' accommodation, new X ray department and operating theatre.

Paddington Green Children's Hospital.—£2000 towards extension, increasing the number of beds from 46 to 92.

Queen Mary's Hospital for the East End.—£5000 towards new casualty block, increasing the number of beds at the hospital from 160 to 184.

Royal London Ophthalmic Hospital.—£500 towards additional nurses' accommodation, enabling the number of available beds to be increased from 120 to 150.

St. Mark's Hospital.—£500 towards extension, increasing the number of beds from 54 to 65.

St. Mary's Hospital, Paddington.—£4000 towards extension, increasing the number of beds from 290 to 340.

South London Hospital for Women.—£2000 towards the provision of block containing new out-patient department and nurses' quarters.

University College Hospital.—£250 towards provision of four casualty beds.

Victoria Hospital for Children.—£500 towards extension of light treatment department; to be the last £500 to render the extension free of debt.

Walthamstow, Wanstead and Leyton Children's and General Hospital.—£1000 towards extension.

Wembley Hospital.—£2000 towards erection of a general hospital of 24 beds, with casualty department.

West London Hospital.—£500 towards new casualty department and additional accommodation for nurses required by the opening of recent extensions, including male and female accident wards.

Woolwich and District War Memorial Hospital.— £5000 towards erection of general hospital.

Lady Ampthill having seconded, the motion was put and carried.

Pensions for Hospital Officers and Nurses.

The Chairman of the Management Committee (the Earl of Donoughmore) presented a report of the committee on the scheme of pensions for hospital officers and nurses, as follows:—

It stated that at the annual meeting of the President and General Council in May last the Management Committee reported on the scheme of pensions for hospital officers and for nurses. The scheme itself had been described in a memorandum which was drawn up in 1925 by a conference of representatives of the British Hospitals Association, the Incorporated Association of Hospital Officers, and the College of Nursing, with the King's Fund as conveners, and was circulated to the hospitals in London and the provinces for their consideration, and for expressions of opinion and suggestions. A Provisional Council, with Sir Edward Penton, K.B.E., as chairman, was now responsible for the scheme, and at the present moment 86 hospitals in London had joined, representing 11,448 beds out of a total of about 14,500. A circular had been sent out by the Provisional Council to hospitals outside London, notifying them of the progress made since the issue of the draft scheme in November, 1925, giving a list of the kinds of institution eligible to join, and describing the proposed arrangements with insurance companies. The scheme applied to nurses not only in hospital service, but in all branches of the profession for which provision was not otherwise made.

Remarks by the Prince of Wales.

His Royal Highness the Prince of Wales then read the following gracious message from the King: "The King is glad to learn that the Fund has been able to maintain the same distribution as last year, though he realises that this has only been possible through the timely help of two or three large donations. His Majesty has much at heart the objects and activities of the Fund, which he earnestly trusts may continue to receive the generous support of the public, and thus be enabled to fulfil the demands made upon its resources, due to the ever-increasing work of the London hospitals." Continuing, he said that last year they raised the total from £235,000 to £245,000, and in the end had £9000 in hand for future contingencies. This year they were £9000 short. So, by using last year's surplus, they were just able to keep the ordinary distribution at £245,000. If the £39,750 special grants out of the Wells estates were added the grand total would be £284,750. This surplus of £9000 last year was due to legacies, which were always liable to fluctuations. This year they are very much smaller than usual. In the other items of income the receipts had been well kept up. The British Charities Association have kindly entrusted the Fund with £15,000 for hospitals in London—not quite so much as last year, but equal to 1924. Donations had increased—£27,000 as against £22,000. They included the very welcome gifts of £10,000 from Mr. Albert Searle, £7000 from one anonymous donor, and £1500 from another. These gifts had saved the situation.

The Financial Position of Hospitals.

With regard to the financial position of hospitals, there were in 1925 more surpluses and fewer deficits than in any year since the war. Voluntary gifts came to more, and patients' contributions went up; the amount collected by the hospitals for building schemes increased, and their receipts of all kinds during the year reached a colossal total. These figures were all in the King's Fund Statistical Report: voluntary gifts, £98,000 up; patients' contributions, £74,000 up; building receipts increased by £364,000; total receipts of all kinds for the year, £3,887,000. Yet, in spite of all this, said His Royal Highness, the hospitals wanted from the King's Fund distribution just as much, or even more, the reason being that their work was growing quite as fast as their income. More beds had been opened, and more still were being provided. It was quite a mistake to suppose that the voluntary hospital system was incapable of expanding. Present schemes would add 1600 beds to those that were open a year ago. The Fund was, therefore, asked to help, both in maintaining the additional wards that are open and in building those that were being provided. The Wells bequests had helped to add 1000 beds; to increase substantially the provision for dealing with accidents; and to meet the needs of newly populated areas in outer London. To meet fresh needs, the King's Fund had extended its boundaries and relaxed its rules about new hospitals, and was thus able to assist these districts both with money and, if they so desired, with advice. As a further sign of progress in hospital finance, he welcomed the announcement that the income of the Hospital Savings Association had already reached £150,000 a year, and he congratulated all concerned.

The meeting closed with the usual votes of thanks.

On the same day His Royal Highness presided over the annual meeting of the League of Mercy.

METROPOLITAN HOSPITAL SUNDAY FUND.

Sir Charles Wakefield, in the absence of the Lord Mayor of London, presided at the annual meeting of this Fund, when it was stated that the year's collections—namely, £87,049—showed a drop of £7792 on last year's total. Hospital Sunday for 1927 was fixed for June 19th.

UNIVERSITY OF LEEDS.—Sir Berkeley Moynihan has resigned from the Chair of Surgery on his retirement from the full staff of the Leeds General Infirmary. At a meeting of the University Council held on Dec. 15th a resolution was passed expressing regret at his decision and appreciation of his services.—Miss D. M. B. Gross, M.B., has been appointed part-time Assistant in Experimental Pathology and Cancer Research.

DAVOS SCIENTIFIC SPORT WEEK, JAN. 2ND TO 10TH, 1927.—During the first ten days of the New Year visitors to the Davos valley are invited to combine sport with instruction, and among those announced to give scientific lectures are Prof. Abderhalden (Halle), Dr. Diem (Berlin), General Secretary of the German National Committee for Physical Culture, Prof. Hellpach (Heidelberg), Prof. His (Berlin), Prof. Hill (London), Dr. Knoll (Arosa), President of the Swiss Medical Sport Commission, Prof. Mallwitz (Berlin), Docent Dr. Matthias (Munich Zuoz), Dr. Munck (Denmark), and Prof. Stähelin (Basle), who will between them cover the physiological and social-hygienic significance of sport, its hygiene and history, its value as a means of education, and the conditions proper to its use.

THE LANCET.

LONDON: SATURDAY, DECEMBER 25, 1926.

1926.

THE time has long gone by since any attempt could be made to recapitulate at the end of the year the progress of medicine in all its provinces in such a way as to indicate the various steps forward that had been taken during such a period. The range of medical interests is now so large, and the subdivisions so numerous, that to deal in any summary way with scientific, professional, or public advances, as they presented themselves through twelve months, would result in an outline so bare as to be useless. But it may be possible to look back over a year at its closing and to indicate what appear as the salient lessons, so that something may be learned from the events.

In the development of service rendered by medicine to the public the fact has emerged more clearly than ever during 1926 that, while the creation of special organisations of various sorts in the realm of preventive medicine has produced a new general order of things, the individual practitioner, who has the whole domiciliary care of the population in his charge, remains in the first line of defence against disease. The point was well made by Sir GEORGE NEWMAN at the Annual Oration of the Hunterian Society early in the year, when he took for his subject the part played in the evolution of preventive medicine by the private practitioner, and was able to show that hygienic prophylaxis, whose principles were laid down throughout the eighteenth and nineteenth centuries by the enterprise and wisdom of individual doctors, now, and in face of the various special activities created for the purpose, owes its inspiration and depends for its primary action upon the private practitioner. A large proportion of the medical men who serve local education and sanitary authorities are still in private practice; the Poor-law Medical Service is staffed by private practitioners almost entirely; the same can be said of the Post Office Medical Service, while the duties arising out of the National Insurance Acts fall in overwhelming measure upon the same body of men, who form three-quarters of the constituency. All this adds great weight to the evidence submitted to the Royal Commission on Local Government by the British Medical Association, in whose memorandum the need for unification of local health administration is brought out, as well as the desirability of a radical revision of the local areas in accordance with which the existing work is done. It has been pointed out in our columns that a large extension of the county borough system would go a long way towards instituting the necessary reforms, for hand-in-hand with this extension there would be a general recognition of the place that the large institution must play in modern curative medicine, while such institutions, when provided, would form exactly the foci that are needed for a general plan of rearrangement. In other matters than health the old areas are being altered in deference to the shifting of populations, the rise of urban aggregations, and the developing facilities for transport; and during the past year these facts have become increasingly plain to the public, while the general body of the medical profession is better prepared than it ever has been to accept the fuller responsibilities implied and to make use of the opportunities with which they would thus be provided. And once again, with regard to the pattern which such development might take, we refer our readers to the document which the Consultative Council on the Medical and Allied Services presented to Dr. ADDISON, the first Minister of Health, some six years ago. The Dawson Report was an able sketch of the possible organisation of health administration in England upon a group system, in which great care had been taken to keep medical practice at the periphery of the various areas in touch, first with the general practitioners of that area, and, secondly, with the consultant and specialist branches of the profession and the institutional machinery, thus affording to the whole community that real supervision of communal and individual welfare that was promised by the National Health Insurance Scheme.

There is a general awakening of public intelligence to the necessity for an enhanced order in the administration of medical service, and this fact has provided a really hopeful note for the medical profession during the past year of social trial, which has brought with it special anxieties for medicine; and it would have been pleasant to end on this note. But to do so would be to disregard the mass of information which has been supplied during the period by medical officers of health from centres of widely differing kinds, to the effect that housing conditions in the country still remain deplorable. There is no need to insist—so obvious is it—that in the domiciliary practice of the profession the public possesses alike its greatest alleviation of misery and readiest chances of prophylaxis; by so much is it a tragedy that the prevailing domicile should remain unsuited alike for the care of the sick or the prevention of sickness. It would be quite unfair to forget either the great improvements that have taken place recently or the extensive schemes that should soon have a like outcome; but there is need to increase the pace, and only a wider appreciation by the public of this need will furnish the required impetus. There are too many homes in this country to-day which we should be ashamed to submit to the scrutiny of even so broadly sympathetic a guest as Old Father Christmas.

RENAL TUBERCULOSIS.

THE treatment of unilateral renal tuberculosis by nephrectomy may justly be regarded as one of the triumphs of surgery. The last weeks or months of a patient afflicted with this disease, when it runs its course without intervention, are usually pitiable in the extreme. Racked with constantly recurring and painful contractions of the bladder, exhausted from want of sleep, poisoned by the tuberculo-toxin, death becomes a welcome liberator. It is no wonder that urologists, profoundly impressed by the contemplation of this gloomy picture of the disease, have strenuously advocated the necessity for early surgical treatment as the only hope for the unfortunate

victim. As a result there has arisen the belief that without it a rapid downward course is inevitable. While this is in general true, and while it has never been demonstrated that there ever occurs a complete eradication of the disease in a pathological sense, it is true to say that occasionally the disease becomes localised and shut off from the body by tissue reaction so completely that virtually it amounts to a cure. Clinically and subjectively the patient regains his health.

Mr. H. P. WINSBURY WHITE elsewhere in this issue gives an account of what is known as closed renal tuberculosis, and reports four cases. One of these is very remarkable, as it was only discovered, after death by accident, in a policeman who had performed all his onerous duties and lived his life without any urinary complaint at all. Such complete silence of renal tuberculosis is rare. Usually there have been urinary symptoms at some stage, but the ureter becoming impervious at its upper extremity, they disappear entirely, the kidney remaining as a pyonephrosis or becoming destroyed by a process of fibrosis which effectively segregates the tuberculous nidus from the rest of the body. At a recent meeting of the Royal Academy of Medicine in Ireland Prof. ANDREW FULLERTON introduced a discussion upon the tuberculous kidney by giving his experience in 150 cases. He declared that the presence of tubercle bacilli in the urine is not always conclusive evidence of a tuberculous kidney, for they may have come from a primary focus in the prostate or seminal vesicles. Cystoscopy is always required, but is sometimes accompanied by great risk, and indeed has been followed by death. When it is impossible to get the required information by cystoscopy, Mr. FULLERTON exposes the ureters in the iliac region, and by this means obtains samples of urine coming from the kidneys. He has performed 71 nephrectomies for the disease, with five deaths. He, too, described a series of cases illustrating Nature's method of cure. Mr. SETON PRINGLE, taking part in the same discussion, emphasised the fact that even with a bilateral infection the outlook for the patient is not quite hopeless. One such patient is well 15 years after the bilateral nature of the infection was established by cystoscopy, a result he attributed to tuberculin treatment, of which he is a strong advocate. So impressed has he been with tuberculin treatment that, when nephrectomy is contra-indicated, he looks upon it as an invaluable substitute for operation. From it can be confidently expected improvement, and possibly even cure. Sir WILLIAM WHEELER was able also to subscribe to the statement that bilateral disease is consistent with apparent health for a number of years. Sir WILLIAM TAYLOR described a similar 15-year-old cure with tuberculin in a case of bilateral disease.

In this country, however, the general opinion seems to be that tuberculin, whilst of use in combating infection of the epididymis, bladder, or prostate, is useless in the management of the tuberculous kidney. This is certainly too extreme a standpoint to assume, for cures under a tuberculin régime have occurred beyond doubt. Whilst it remains true that the best hope—and it is a considerable one— for a return to complete health lies in a nephrectomy, provided always the disease is unilateral, nevertheless when this ideal treatment cannot be carried out, the opposite kidney being suspect, the future for the patient is not necessarily altogether bad. He may overcome his disease by walling it off with a layer of dense connective tissue and return to apparent health. He will be assisted in this process by open-air therapy, rest, and the judicious use of tuberculin.

LOSS OF MEMORY.

JANET'S theory of dissociation, though now somewhat neglected in favour of the more dynamic theory of the unconscious, conveniently gathers under one conception a series of phenomena ranging from incidents of every-day life to hysterical anæsthesia, or double personality. In our waking moments there is present a stream of mental processes of which we are fully aware, but there may be subsidiary streams of which our awareness is less distinct. The reader of an interesting book, for example, may be dimly conscious of a feeling of discomfort that leads him to alter his position without his directing much attention to the feeling or the resultant movement. He may, indeed, claim to be quite unaware of them, and such a shutting-off of awareness may be carried to a pathological degree; so in hysterical anæsthesia the sensations arising from the anæsthetic area are, as JANET has shown, really perceived by the patient in a way that can best be understood by postulating a consciousness quite distinct from the ordinary stream. In these cases the streams of consciousness are simultaneously present—parallel, as it were; but an extension of the theory allows us to picture a dissociation of the continuity of consciousness by the irruption of a stream of thoughts, with their associated behaviour, apparently alien to the ordinary life of the subject. In "A Tale of Two Cities," the story of Dr. Manette (which indicates that DICKENS had a knowledge of abnormal psychology) gives an example of such a dissociation or change of personality, in which the cause, known to the reader, is hidden from the subject because of the abrupt break in consciousness. Dissociation is presumed to occur in somnambulisms, hysterical fugues, automatic writing, spiritualist trances, and cases of double personality. Amongst text-book examples of the latter is an account of a clergyman who disappeared from his ordinary circle, wandering away in an altered state of consciousness, and returning to his normal consciousness to find himself in business as a confectioner. The descriptions of some cases raise the suspicion that the splitting of the personality had been encouraged by the methods of the investigator, and in this connexion it may be noted that psycho-analysts have been charged with neglecting this corner of abnormal psychology, a charge which they meet by declaring that their methods prevent such splitting of the personality and hence deprive them of the opportunity of studying its course.

From one aspect, and the obvious one, a hysterical fugue, or change of personality, appears as a loss of memory. Such a loss was common in the minor psychoses of war, and the shell-shocked soldier who had lost his memory was, from another point of view, in a state of dissociated consciousness. The distinction between the suppression of memories and a dissociation of consciousness is, indeed, not always easy in theory or important in practice. The suppressed memories go to make up the dissociated stream if a fugue occurs or may, in the same patient, express themselves by symptoms which intrude into the stream whilst normal consciousness is active. Hysterical fugues as seen in war cases could often be recognised as states in which the intruding stream was made up of suppressed memories, and when, after the fugue, suitable technique succeeded in bringing these into full consciousness the result could be described either as revival of memories or reassociation of a divided consciousness. From another aspect, as hinted above, the fugue may be, like some other hysterical symptoms, the result of suggestion, and the

number of cases recently reported reminds us that hysterical symptoms can appear in epidemic form. Moreover, being a hysteria, the condition is certain to be complicated by the possibility of malingering, and in war cases the sufferers from a pathological amnesia were occasionally in serious danger, from which they were extricated only by the intervention of someone who could recognise the true condition. On the other hand, a claim of loss of memory is often an obvious attempt to escape obloquy or punishment. Since in order to understand hysterical conditions it is necessary to understand the mental processes which underlie the alterations in behaviour, and since for many people it is difficult to conceive mental processes as taking place without the person concerned being aware of them, there is a tendency either to accept fugues or doublings of personality as unquestionable, if mysterious, happenings, or to condemn them as deliberate fraud. Judgment is confused by the recognition of a purpose behind the hysteria. No satisfied and happy person is hysterical, and the symptom may be both a reaction against the surroundings and a means of avoiding or influencing them. If we seek for the *why* of a hysteria we find it not only in memories, but in motives which are not admitted to consciousness and dealt with in accordance with the needs of the situation; hence the presence of motive must not be taken as proof of the witting exercise of volition. In any case involving the question of a dissociation of personality no judgment is acceptable without personal investigation guided both by experience and a knowledge of the possibilities outlined in modern theories of psychopathology.

SCARLATINAL INFECTION OF BOOKS.

AT a recent monthly meeting of the Dunfermline District Committee the Chairman of the fever hospital, Major C. W. L. Ross, complained of the recent increased demand on beds for scarlatinal cases, which he was inclined to attribute, in part at least, to the laxity of the school authority in the matter of infected books. Several cases had been brought to his personal knowledge of children being kept at home because they were suffering from scarlet fever and having their books sent to school so that the lessons for the following day might be worked on them. In reply to Lord Elgin, who asked how the books could be disinfected and what action the health authority could take in regard to them, Dr. A. D. Campbell gave it as his opinion that it was impossible thoroughly to disinfect these books, and, when he had asked the education authority to destroy them, the reply was that they were too valuable. The Chairman of the committee said there seemed to be some doubt where the fault lay, and suggested a reference to the Board of Health for a ruling in the matter. Such ruling would, we believe, require some further investigation before it could be given. When the Society of Medical Officers of Health last discussed the spread of infection by books, there was no certain information before it that infection was ever carried through books, and, apart from virulent small-pox, the chance of infection was regarded as extremely small, if not negligible. It is known that the streptococcus of scarlet fever will only survive drying for a short time, and it is not necessarily virulent even if found alive outside the body. Dr. J. E. McCartney suggested in our columns not long ago that it would be possible to ascertain by investigation the period of survival of the streptococcus in infected books and the length of time the organism is viable under such conditions. In view of such discussions as that at Dunfermline and the important administrative questions which they raise, it seems a pity that this investigation has not yet been made.

Annotations.

"Ne quid nimis."

STILLBIRTH AND NEONATAL DEATH.

EVIDENCE is accumulating which suggests that stillbirth is avoidable in at least half the cases. The first important work done in this country on the cause of natal death in infants was published by Eardley Holland in 1922. The fœtus may be either macerated or fresh, according to whether it was dead or alive at the beginning of labour, and many investigators have shown that only about 20 per cent. of stillborn fœtuses are macerated, the remaining 80 per cent. dying during the process of labour or very shortly afterwards. The distinction is useful since, generally speaking, maceration of the fœtus denotes disease of the mother, syphilis and the toxæmias of pregnancy accounting for most intra-uterine deaths leading to maceration. This shows that syphilis—contrary to belief still current—causes only about 12 to 15 per cent. of all stillbirths. The great majority of natal deaths occur during the process of labour, the actual cause of death being either an intracranial injury or asphyxia. In a recent report, summarised on p. 1337 of this issue, Mr. Eardley Holland and Dr. J. Lane-Claypon record a survey of 1673 cases of stillbirths from various sources, their object being to assess the ætiological factors. The work has been rendered difficult and in many instances inconclusive by lack of essential information, but the findings are comparable to those of other investigators. They state that a certain number of unavoidable deaths are due to deformity of the fœtus; others—such as those following accidental antepartum hæmorrhage—cannot be prevented in the present state of knowledge. The majority, however, are caused by a failure at some point of the obstetric service. Many die because the mother is not properly supervised during pregnancy; maternal disease is not diagnosed while it can still be treated, and there is failure to diagnose pelvic contraction or malpresentation before the onset of labour. Some deaths are the result of failure of the patient to call the attendant sufficiently early in labour; whilst others are caused by bad obstetrics and particularly by the application of forceps in unsuitable cases or at the wrong time. To reduce the number of stillbirths and neonatal deaths the first essential is education of the public on the need for antenatal supervision, as it is wholly unsatisfactory to provide skilful obstetricians for the management of labour if the patients do not submit to supervision during pregnancy. Good antenatal work can lower the incidence of stillbirth (macerated fœtus) and can almost banish neonatal death if it is worked in conjunction with an efficient labour service. Its benefits, however, may be partly lost if the labour service is ineffectual, and there is still room for considerable improvement in this branch. It is unfortunate that Mr. Holland and Dr. Lane-Claypon have been unable to give any details as to the mortality and morbidity of mothers whose children are born dead, for there can be no doubt that if the fœtus is injured severely enough to cause its death the mother is likely to be injured at the same time, so that anything which makes for the reduction of obstetric interference is likely not only to reduce the fœtal but the maternal mortality at labour. The rates of stillbirth and neonatal death form a useful index of the efficiency of the maternity service as a whole. A strong case can be made out for the notification of such births and deaths, and although there are technical difficulties, they are not greater than those which arise in the notification of puerperal pyrexia.

THE ÆTIOLOGY OF MONGOLISM.

ABOUT a year ago the Section of Psychiatry of the Royal Society of Medicine met to discuss the problem of the Mongol,[1] but their combined efforts threw no light whatever on the cause of the phenomenon nor even on its true nature. The picture is much too common and well-defined to be the accidental result of a number of separate causes, and it is a reproach to pathological science that the explanation should still be unknown. Dr. A. B. Marfan, in a comprehensive summary published in the *Presse Médicale* of Nov. 3rd, deals with the three theories which command the most attention. The first is that of W. J. Langdon-Down, who has suggested that Mongolism is an anomaly of reversion to a remote ancestral type. The standing argument against this view is that, if Mongols are really throw-backs to Mongolian ancestors, they ought to be physically and mentally as fit as normal Chinese or Japanese, whereas, in fact, every one of their characteristics marks them as "half-baked." F. G. Crookshank points out a number of features which he says are characteristic of the Mongolian race and the Mongolian imbecile alike—the short, thick-set limbs; the tendency to a relative diminution in the size of the arms and thighs, as in achondroplasia; the tendency of the two lower cutaneous folds of the palms to join into one, as in certain monkeys; the fissured tongue; and many others. These may be characteristic of the Mongolian race, says Dr. Marfan, but they are certainly not uniformly characteristic of the Mongolian imbecile; some of them, moreover, are not racial characteristics but pathological stigmata. The second theory, expounded in this country by G. E. Shuttleworth and in France by Jules Comby, sees the cause in a kind of accidental impairment of the reproductive cells, a result of debility in either parent, but especially in the mother. Thus the possible causes of the condition are legion; any intoxication, infection, or injury suffered during gestation may be responsible for the change. The exponents of the theory, however, lay particular stress on the importance of unregulated emotion and repeated pregnancy in the mother. Mongols are generally, they say, the children of women who have experienced severe mental pain, fear, or disappointment during pregnancy, or who have been exhausted by many births. The chief objection to this opinion is, again, that it does not altogether fit the facts. Such causes may often predispose to abnormality, but it is difficult to regard them as essentials, for innumerable women who are the slaves of their emotions do not produce Mongols, and not a few Mongols are the offspring of mothers whose habits and environment are irreproachable. The third theory is that Mongolism is due to congenital syphilis. Those who support it advance the arguments that careful scrutiny of the family history and examination of the patient will show the existence of the infection or its stigmata in half the cases. In most of the other half they find good presumptive evidence that a syphilitic taint has been inherited from an ancestor two generations back.

Protagonists of the various theories of Mongolism may take courage from the undoubted fact that all the predisposing causes have been met with in some cases. It is, indeed, very probable that in many instances more than one predisposing condition is present. The last two children of a syphilitic mother known to us are Mongols, though the other children are normal, one being sufficiently bright to hold a scholarship. All are Wassermann-negative. The mother's infection is of long duration, and before the last two births she was worn out by poverty, worry, and repeated childbirth, while during the earlier pregnancy she underwent an emergency operation for twisted ovarian cyst. Which of the three factors—endocrine disturbance, exhaustion, or syphilitic taint—is to be held responsible in this case? Dr. Marfan, who himself inclines to the syphilis theory, points out that a number of signs exhibited by many Mongols in the first six months of life, the so-called scrotal tongue and malformations of the heart and adenoids for example, are strongly indicative of hereditary syphilis. This view is supported by the work of Babonneix, who states that post-mortem examination of a Mongol's brain shows lesions of the meninges and vessels that strongly suggest syphilis. As these lesions occur before birth and are responsible for the cortical hypoplasia that is an invariable feature of Mongolism, it is not to be expected that specific treatment would have much effect on them. The hypothesis that Mongolism can be due to syphilis in a more or less remote ancestor, as well as in a parent, is certainly ingenious. Taking into account the high incidence of the disease in the eighteenth century, when sexual morals were at a low ebb, it is argued that few families nowadays, however respectable, can claim that their line of descent is absolutely free from it. The taint is doubtless modified and attenuated, says Dr. Marfan, but is nevertheless still capable of causing harm. Attacking the endocrine glands at the outset of their growth, it inhibits their efficiency according to a more or less regular plan—and the result is the Mongol, whose all-round shortcomings are fairly attributable, considering the pathological evidence, to this cause. M. Jansen's theory of abnormal amniotic tension is consistent with this supposition, but unfortunately, although autopsies generally show a deficiency in one or more glands, not only are different glands affected in different cases but there is no regularity in the nature of the lesions.

[1] THE LANCET, 1926, i., 190.

OXYGEN ADMINISTRATION.

IN a paper read before the Therapeutic Section of the Royal Society of Medicine on Dec. 14th Dr. R. Hilton compared the oxygen in the alveolar air after its administration by the following methods: 1. Large glass funnel held 10 cm. away from the mouth. 2. Large glass funnel held in close contact with the bridge of the nose and under the chin. 3. Large glass funnel, the funnel being shaped to the face. 4. Nasal catheter, with its tip in the nasopharynx, and with one hole near the end. 5. Face-mask provided with inspiratory and expiratory valves, connected so as to supply oxygen only. Oxygen was given at rates varying from one to nine litres a minute by funnel or catheter. The figures were obtained from a normal subject, for the measure of success of any method of giving oxygen for the relief of anoxæmia must depend on estimations of the oxygen saturation of the arterial blood, and repeated arterial punctures, although safe, are not desirable in a sick man. The first essential step in the carriage of oxygen from the exterior to the blood can be examined easily by analysis of the alveolar air; the second step—namely, its further transference to the blood—cannot succeed if the first step fails. Dr. Hilton's findings appear to be definite and consistent. In the first place, they show convincingly that a glass funnel held 10 cm. from the mouth has no effect whatever on the oxygen in the lungs, even with high rates of flow. This is a conclusion, as one of the speakers remarked in discussing the paper, at which many clinicians have already arrived by their own observations. When the funnel is held in close contact with the face, however, even the lower rates of flow cause a definite rise to alveolar oxygen. Thus, the original pressure while breathing air (100 mm., i.e., 14 per cent.) was doubled with an oxygen flow of three litres per minute. With a flow of seven and a half litres per minute 350 mm.—i.e., 50 per cent.—was reached. The nasal catheter gave similar figures at low rates, but even at three litres per minute caused discomfort, and above four was not tolerated. Evidence was given to show that even the lower rates of flow had a definite effect in anoxæmia. The Haldane mask and bag, and its modification by Gilchrist and Davies, was found to be considerably more efficient than the funnel method, while the highest figures of all (over 90 per cent. oxygen in alveolar air) were obtained with the two-valved face-

mask. Owing to the intolerance of dyspnœic patients for a mask over the nose and mouth, Dr. Hilton was led to try administration by means of a mouthpiece fitted with valves, the nose not being covered. Oxygen is thus taken in by the mouth and air by the nose. This method, more readily tolerated by the patient, gave with a total ventilation of six litres per minute over 350 mm. oxygen pressure—i.e., 50 per cent—in the alveolar air.

EPILEPSY.

IN his Presidential Address [1] delivered before the Psychiatric Section of the Royal Society of Medicine on Dec. 14th, Dr. Aldren Turner referred to recent work on epilepsy and stated that, although such work had thrown new light upon this disease, it could not be claimed that the secret of epilepsy was yet revealed. He referred to the broadening of the basis of the disease and the inclusion within its ambit of disturbed states of consciousness of longer duration, which may be regarded as "equivalents" of the classical epileptic seizure. It was one of the features of epilepsy that the characteristic disturbance of consciousness was observed in association with different fundamental causes, and there was reason to believe that three special varieties—the organic, the toxi-infective or metabolic, and the psychogenic groups—could be taken out of the mass of undetermined epilepsy or "epilepsy of unknown origin." After referring to the association of epileptic fits as a symptom of cerebral tumours and in penetrating wounds of the head, he discussed briefly the circumstances attending the initiation of the "grand mal" and reviewed the doctrine that vascular spasm and cortical anæmia were the primal cause of the seizure. A view had been expressed, and had found some support, that in consequence of a local cerebral lesion, which was envisaged in epilepsy, a toxin was evolved which acted as an irritant upon the cerebral blood-vessels and caused a sudden, local, and spreading anæmia of the cortex. But what would explain a periodic local toxæmia arising unexpectedly in seeming good health and often persisting throughout a lifetime? On the other hand, a proposition had been put forward that the phenomena of epilepsy may be explained by the presence of toxic agents circulating in the blood and acting upon the cerebral blood-vessels, these agents arising from defective carbohydrate metabolism or adrenal overaction in emotional distress.

There was, said Dr. Turner, considerable clinical evidence in favour of a toxi-infective or metabolic group of epilepsies, but satisfactory biochemical support of this view was so far not available, although interesting and suggestive work was being carried out on this aspect of the disease. Of this character might be mentioned attacks of serial epilepsy and the status epilepticus, fits ensuing during or within a brief interval of the exanthemata and other infective disorders; possibly also the epilepsies arising de novo in, or aggravated by, pregnancy, lactation, and the puerperium. In Dr. Turner's view a quite unproven degree of importance had been attached by some writers to a relation between epilepsy and disturbance of endocrine function, although there was evidence of an association between pituitary tumours and epilepsy, and cases have been observed in which, from other evidence, it was probable that the pituitary glandular balance was impaired. In his experience, therapeutic measures based on endocrine deficiency had been attended by negative results. He discussed at some length the interesting question of epilepsy of psychogenic origin and referred to the great difficulty in distinguishing clinically between hysterical and epileptic types of fit-reaction in many cases, especially when the determining influence lay in some emotional cause such as shock, fright, or anxiety. He referred to the views of Rows and Bond, who regarded even the major epileptic fit as mainly the result of a disturbance of consciousness produced through memories and the emotions associated with them. But it was difficult to believe that even an intensified emotion by itself could give rise to so dramatic a crisis as the "grand mal," which in some cases might threaten even life itself. Though psychotherapy and the psychoanalytic method had been employed now for some years in the treatment of epilepsy, the beneficent effect anticipated by its advocates had not been realised. The relation between emotional distress, hysteria, and epilepsy was, however, a close one, and it was now accepted that certain individuals exhibit seizures clinically indistinguishable from epilepsy in situations of a purely psychical kind.

The "epileptic personality" described by Pierce Clark was considered by Dr. Turner to be a rare form of mental make-up in this class of patient. Ordinarily the young potential epileptic did not differ in temperament from other young persons. The nature of the disease, however, led, in course of time, to anxiety and apprehension, and the final mental condition was often one which showed some crippling of the mental faculties and a tendency towards asocial habits. This was not necessarily permanent if the fits could be arrested. After the elimination of the groups just referred to a mass of epilepsy remained, to which a social problem was attached owing to the number of cases requiring supervision in special institutions. Much of this epilepsy was of unknown origin and included the common variety of the disease arising in later childhood, puberty, and adolescence. In the study of epilepsy many clinical features of interest arose and reference was made to a few of them, such as the relative frequency of the disease in only children, the onset of the disease during periods of rapid physical growth and development, the occurrence of a few fits temporarily during some period of adult life, the occasional onset of the major seizures with the coming on of arterio-sclerosis in later life, the relation of epilepsy to sleep, dreams, and nightmares, to migraine and periodic headache, and to nocturnal enuresis and infantile convulsions. On the question of inheritance in epilepsy, Dr. Turner said there had been a tendency during recent years to belittle its influence as a predisposing factor in the disease. But it was impossible to survey the family history of any large number of epileptics without obtaining direct evidence of this in a substantial percentage of cases—about 33 per cent. according to his investigations. It was even possible to admit what might be called a "familial" group of epileptics. What the cause of the disease was in other cases was, said Dr. Turner, an unsolved problem, although various conjectural possibilities had been put forward, such as an infective disorder, an intoxication or local disease of the germ-forming organs. The facts of epilepsy, however, made it apparent that a large number of human beings had some defect, which was either inborn or acquired during or after intra-uterine life.

[1] The address will appear in full in an early number of the Journal of Neurology and Psychopathology.

THE SEYMOUR PLAN.

Dr. M. M. Seymour, Deputy Minister of Public Health for Saskatchewan, in his presidential address to the annual conference of State and provincial health authorities of North America last May, put forward the proposition that much sickness and death is still caused by diphtheria, small-pox, and typhoid, that science has placed effectual preventive agents in our hands, and that, by arousing the interest of the public, it is now possible by a united effort to wipe these diseases off our list. This implies, he says, a continent-wide attack, by means of toxoids and immunising vaccines. Dr. Seymour's proposal has been enthusiastically endorsed by the American Health Association and by the Canadian Medical Association, whose *Journal* devoted a leading article to it recently. Steps are already being taken in several districts to arouse and educate the public through the press, the clergy, and the teaching profession for the campaign. The question arises as to whether a similar campaign would be beneficial in this country. Possibly different diseases might be selected. Typhoid, for example, is becoming

extinct, and its complete eradication is chiefly a matter of the better control of shell-fish and of carriers. Most of the cases which occur now are of the milder paratyphoid type, the origin of which is frequently obscure, although imported foods from the East have fallen under suspicion. The type of small-pox now prevalent is so mild that the recorded deaths are almost negligible. As regards diphtheria, the immunisation of the staff of isolation hospitals against this infection is widely practised, and an experiment on a large scale has been made with Edinburgh school-children, a scheme which is meeting with the approval of the great majority of the parents. It would, perhaps, be premature to call for such a campaign against rheumatic diseases in children, in view of the fact that their ætiology has not been fully worked out. But we know enough to prevent a great part of rheumatic heart disease, with its crippling effect on the community. We also have enough knowledge entirely to prevent damage to eyesight from ophthalmia neonatorum and to prevent congenital syphilis. There can be little doubt, too, that maternal mortality from childbirth could be readily halved if the methods practised, say, by the obstetric unit of St. Thomas's Hospital, could be put into general operation. There are districts in this country where 80 per cent. of the births are attended by midwives who call in medical aid in about 25 per cent. of their cases. If it were possible in one of these districts to hand over the whole of the obstetric work—ante-, intra-, and post-natal—for a few years to a small panel of skilled obstetricians it would be seen what such close coöperation could achieve. A scheme of this sort has already been put forward in Glasgow. Bovine tuberculosis in the human subject could be stamped out at once if all milk were rendered safe before ingestion. Health Weeks and Baby Weeks provide for the education of the public on general lines. It may be worth considering whether a local campaign against certain definite diseases in the area would not arouse more enthusiasm than does general propaganda.

AN ALLEGED CONSPIRACY OF SILENCE.

SOMETIME in October Mr. Percy Dunn wrote an article in the *Daily Mail* dealing with Dr. J. A. Shaw-Mackenzie's prolonged attention to cancer problems, and there is no doubt that Dr. Shaw-Mackenzie has been unremitting in his work, though there is no general belief that his results have the significance which appears in some quarters to be claimed for them. A passage in Mr. Dunn's account of Dr. Shaw-Mackenzie's enthusiastic concentration upon his self-imposed task (Mr. Dunn's description) has brought us certain communications as to our own attitude. That passage runs: "Dr. Shaw-Mackenzie has been largely debarred from giving professional publicity to his discovery; in a sense perhaps a policy of caution has probably accounted for this conspiracy of silence and neglect." If Mr. Dunn had consulted our columns, he would not have accused THE LANCET, we think, of conspiring to neglect Dr. Shaw-Mackenzie, whose communications to THE LANCET on the subject have been frequent, while in them, it seems, can be found the substance of the claims made for him by Mr. Dunn.

Accusations against newspapers of conspiring to the disadvantage of particular writers because they hold particular views can be easily brought, and such an accusation has been brought against this paper in connexion with a communication received from one of the staff of the Battersea Hospital last June. The paper was returned to the author when no space could be found for it—alas, a frequent occurrence here—but, on the suggestion being made to us that the rejection of the communication was held to be unfair, we invited the author to return it to us for further consideration, but no reply to the invitation can be traced. As far as this paper is concerned we do not admit Mr. Dunn's suggestion that a policy of caution regulates our acceptance of work that does not run on conventional lines; our attempt is to avoid the raising of false hopes by premature endorsement of claims made for such work. The *ipse dixit* of the author may be perfectly honest, and quite justified in his own view, without there being sufficient warrant for accepting the conclusions, when it becomes a duty to refer the communication back to the author. If the arguments in favour of those conclusions are not reinforced, either through further work done by the author, or by work undertaken in other laboratories by independent observers, it is not a conspiracy of silence to decline to publish repetitions of the original statement; this is not being unduly cautious—it is merely securing in our pages more space for reports that appear to be progressing valuably.

Lastly, a statement is not necessarily valuable because it is new. If an author is unable to furnish arguments other than novelty for the insertion of a paper, it is right to believe that it will be no disadvantage to the medical public if they have to wait until the researches have got to a further stage. If the scientific worker requires that assistance from his colleagues, generally or specially interested, which is afforded by discussion at an appropriate meeting of one of the medical societies, he should take the opportunity of securing it. At such a discussion many a man may find that his individual conclusions do not coincide either with the clinical experiences or the laboratory findings of those who may be equally qualified (and even better qualified) than himself to make pronouncements. A communication which has safely emerged from such a reasonable ordeal is never refused by a responsible medical journal, however new its theories or revolutionary its doctrines—it is, on the contrary, welcomed, with the idea that it may contain the records of an advance, or may, anyhow, become a useful focus of activity.

THE PATHOLOGY OF OXALURIA.

THREE theories have been put forward to explain the origin of oxalic acid in the organism: (1) the decomposition of uric acid either in the organism or in the urine; (2) the oxalic acid introduced with food is absorbed and then excreted; and (3) insufficient oxidation gives rise to delayed metabolism of all aliments, or of some of them, which results in the production of oxalic acid instead of a more oxidised body. Dr. E. Lombardi, of the University of Naples, has recently published [1] some interesting researches made with the object of testing the truth of these theories. In collaboration with Prof. Piccininni he showed last year that oxaluria could be induced experimentally in immune individuals by the administration of a special strain of the colon bacillus, which he isolated from the fæces of oxalurics and which was markedly oxaligenous in vitro. Very conflicting results have been reached by experimenters studying the elimination of oxalic acid either after the introduction of uric acid and urates into the organism or after various kinds of food. This finds an explanation in the fact that the true fount of the production of oxaluria escaped them. In fact, granted that the formation of oxalic acid and the consecutive oxaluria are in relation with special microbic fermentations of the intestinal content, it is possible to explain the uncertain and contradictory results of various authors according to the special conditions of the gastro-intestinal apparatus of the individuals they used in their experiments and also according to their microbic intestinal flora. With regard to the food theory, if the oxalic acid contained therein can in a small degree increase the ordinary elimination by the urine, no one any longer admits that it is the exclusive cause of oxaluria. At the most it can give rise to a transient oxaluria just as the introduction of a large amount of saccharine matter may produce a transient glycosuria without there being any true diabetes. The author's discovery of an oxaligenous strain of *B. coli* would seem to confirm the theory of Ogden

[1] La Riforma Medica, No. 37, Sept. 13th, 1926.

and Toepfer of the intestinal origin of oxaluria, and the further set of experiments just published were undertaken to show what is the action of this special microbe in inducing oxaluria in individuals who are free from it and to compare in the same individuals the oxaluria produced by the ingestion of food rich in oxalic acid with that induced by the special *B. coli*. In his first series of experiments on five patients suffering from tabes, pituitary tumour, post-encephalitis, diabetes, and Graves's diseases, who were free from oxaluria and to whom he administered cultures of *B. coli oxaligenus* with a diet free from oxalic acid, he succeeded in inducing a more or less marked oxaluria in which the amount of oxalic acid eliminated in 24 hours was estimated accurately. In the second experiment three of these same patients (with tabes, pituitary tumour, and post-encephalitis) were given 200 g. of spinach daily and it was found that the urinary elimination of oxalic acid showed only a very small increase, an amount very much below that produced by the oxaligenous germ. In a third experiment, on a patient who had passed an oxalate of lime calculus and on two diabetics of long standing, it was found the greatest oxalic elimination occurred with a mixed diet, in comparison with a purely carbohydrate or purely proteid diet. These facts, according to Dr. Lombardi, may be explained in the following manner: the intestinal fermentation which changes according to the variations in diet offers certain conditions more or less favourable to the activity of the oxaligenous germ, which in its turn causes the oxalic fermentation of the carbohydrates and hence a greater absorption and increased elimination of oxalic acid in the urine.

Some results of investigating the metabolic aspect of oxaluria have just been put on record by Prof. G. Viale,[2] who has studied the effects of injections of insulin, adrenalin, and phloridzin on the formation and excretion of oxalic acid, and also the results of removing the pancreas. He concludes that excess of oxalic acid in the organism is due to irregular metabolism of carbohydrates—an irregularity for which he blames the pancreas. He summarises the experimental results as follows: (1) The injection of insulin does not alter the amount of oxalic acid in the blood. (2) This injection lowers notably the elimination of oxalic acid by the kidneys; it has an equal effect in reducing the large amount passed by diabetics. (3) On the other hand, the injection of adrenalin much augments the excretion of oxalic acid, an effect which becomes daily greater for some days, in conjunction with an increased excretion of glucose. (4) The removal of the pancreas increases the excretion of oxalic acid. (5) Phloridzin produces no noteworthy change.

IDENTICAL TWINS.

IT has been suggested that the habit of women to produce only one child at a time is a relic of an arboreal ancestry. Since they came to earth they have, to a small degree, reverted to the original habit of nourishing more than a single ovum, and twin births, the individuals of which are no more like one another than their brothers and sisters born separately, are not uncommon. But they have also learned, apparently, to increase their productivity by making more than one individual out of a single ovum—an art highly developed in some armadillos, in which one ovum normally gives rise to as many as eight or ten young by a process of fission and budding. In lower animals it has been shown beyond doubt experimentally that one of the two cells into which an ovum divides at its first segmentation can give rise to a whole complete individual, and there are many reasons for supposing that the same thing happens in man. Anatomical or functional separation of the parts of an ovum in the early stages of its division probably accounts for a number of human abnormalities. At one end of the scale we have ovarian teratomata, in which the dermoid represents an individual which has made an almost complete failure of development. Better success in various degrees is shown in the different kinds of double monsters, some of which are normal enough to survive as Siamese twins. And at the top of the scale we reach the twins, both from a single placenta, which have a degree of resemblance to one another which has excited notice from the earliest times. The whole series of facts leaves little room to doubt that these so-called identical twins really come from a single egg: it is clear, however, that we cannot affirm that all uniovular twins are identical in their make-up, though it is difficult to understand how they can be otherwise. A good example of such twins has lately been studied by Dr. G. P. Crowden (*Guy's Hospital Reports*, October, 1926, p. 379), who gives exceptionally full details of two brothers who seem to be more like one another than a pair of peas. Their size, shape, appearance, rate of growth, finger-prints, differential blood counts, illnesses, scholastic records, mental characteristics, muscular power, and everything else which was measured, all show the extraordinary degree of similarity which has been repeatedly described. In this particular case the resemblance has, perhaps, been increased by the fact that both have spent their lives in exactly the same environment. Most identical twins are likely to do this, at first because they are twins, and later because they are so similar mentally and psychically. What is particularly needed is the study of examples where the two individuals have been separated and brought up in different ways. Cases of this are probably very rare, so that any opportunity of examining them in detail should be taken; it is a unique chance of getting some clear light on nature versus nurture.

[2] Revista Sud-Americana de Endocrinologia, November, 1926.

As we go to press we learn that the summons against Prof. E. B. Verney, for having unlawfully in his possession a dog, knowing it to have been stolen, was dismissed by the Clerkenwell magistrate, who awarded £5 5*s*. costs against the prosecution.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Lt.-Comdrs. to be Surg. Comdrs.: E. Heffernan and W. J. Morris.

The following appointments have been made:—Surg. Comdrs.: G. F. Syms to *Erebus*; H. E. R. Stephens to *Calcutta*, addl., and as squadron medical officer; W. H. A. Sinclair-Loutit to *Capetown*; R. F. Quinton to *Maidstone*; and J. G. Danson to *Emperor of India*.

ROYAL ARMY MEDICAL CORPS.

Majs. R. G. Martyn, A. Irvine-Fortescue, and R. B. Price are secd. for service under the Colonial Office.

Capts. to be Majs.: A. E. S. Pringle-Pattison, H. D. F. Brand, F. C. Atkinson Fleming, D. C. Monro, G. S. McConkey, J. A. L. Wilson, and H. Alcock.

ARMY RESERVE OF OFFICERS.

Col. A. H. Waring, late R.A.M.C., having attained the age limit of liability to recall, ceases to belong to the Res. of Off.

TERRITORIAL ARMY.

Cols. A. W. Sheen, Sir H. E. Bruce Bruce-Porter, and E. J. R. Evatt, having attained the age limit, are retd. and retain their rank, with permission to wear the prescribed uniform.

Lts. G. T. Symons and K. S. Roden to be Capts.

W. Niven to be Lt.

ROYAL AIR FORCE.

Flight Lt. (Hon. Squadron Leader) W. R. Reith relinquishes his temporary commission on account of ill-health.

INDIAN MEDICAL SERVICE.

Lt.-Col. G. Browse to be Col.

ROYAL SURGICAL AID SOCIETY.—The income for the year reached the "record" figure of £49,000. Nearly 25,000 patients were supplied with 33,594 appliances.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CCIII.—TREATMENT OF FRACTURES OF THE JAWS.

THE great majority of fractures of the jaws met with in civil life occur in the mandible. Fractures of the body are almost invariably compound, for the mucous membrane covering the bone is easily torn. Fractures of the lower part of the ascending ramus may also be compound, but those in the upper part, as well as fractures in the region of the condyle, are usually simple. In the mandible the site of fracture may be through the body, the ascending ramus, coronoid process, and condyle. A. G. Allen,[1] in a useful review of the subject, found that over 90 per cent. of all fractures of the mandible occurred in the body. Of these the commonest site is in the region of the canine tooth, the next frequent place is in the neighbourhood of the third molar. Although a fracture may occur as the result of disease—e.g., a tumour—by far the commonest cause is direct violence such as a blow or fall.

As with other bones a fracture of the mandible is followed by displacement of the fragments, which depends on the pull of the various muscles attached.

A fracture in the region of the insertion of the masseter may be splinted by that muscle so that little displacement occurs. For the same reason fractures of the ascending ramus may give little objective sign. Fractures of the condyle are rare, and may not cause any displacement, though sometimes there is a deviation of the chin toward the injured side owing to the action of the external pterygoids. The chief objective sign of displacement is an inability to close the teeth properly. An exact reduction of the fragments in their anatomical relationship is important, since a malunion, even if only slight, will upset the occlusion and impair mastication, and may necessitate extraction of the misplaced teeth later. In patients with few or no teeth imperfect reduction is of less moment for obvious reasons, though it should be aimed at as the ideal.

Preliminary Measures.

A radiograph should be regarded as an essential part of the diagnosis of a fractured jaw even though the fracture may be obvious. Apart from its value as a safeguard to the practitioner a radiograph may show that a tooth is involved in the fracture and will require extraction. It is not uncommon for an obvious fracture through the body to be associated with a fracture through the ascending ramus on the opposite side. If a radiograph cannot be obtained at once there is no need to delay treatment, for the construction of a splint will take some days during which time a radiograph can be obtained. As soon as possible the teeth should be cleaned up, tartar removed, and loose roots or obviously septic teeth extracted. Since the majority of fractures are compound the presence of dental sepsis will exercise an unfavourable effect on the result and will be likely to delay union.

In general, the extraction of the teeth immediately adjoining the fracture is a wise measure and they should be retained only when their presence appears to be essential to reduction and fixation.

Reduction and Fixation of the Fracture.

The efficient treatment of the vast majority of fractured jaws depends on the mechanical control of the fragments, which are usually considerably displaced. This necessitates a splint of some kind, the construction of which is only possible in a dental laboratory. It still sometimes happens that a patient under the care of a medical practitioner is not seen by the dental surgeon until several days have elapsed. Even if the general condition of the patient is so serious that the treatment of the fracture must be deferred, it would mostly be to his advantage that the dental surgeon should see him as soon as possible. The longer treatment is delayed the greater will be the displacement and the more difficult its reduction, owing to muscle spasm.

Fractures of the Body of the Mandible.

Fractures in the body of the mandible may be divided into three groups: (*a*) those in which there are teeth present on the posterior fragment; (*b*) those in which there are no teeth on the posterior fragment, or if present, the teeth are useless as anchorage for a splint; (*c*) fractures of the body in an edentulous jaw.

(*a*) *Where Teeth are Present on Posterior Fragment.*—In the first group the best type of splint is the metal cap. This splint covers the crowns of the teeth on each side of the fracture and is fixed by cement. It is easily kept clean and though conspicuous, does not interfere with normal function and allows the patient to follow his ordinary life. It provides secure fixation of the fragments and gives an excellent result.

An impression of both jaws is taken in modelling compound. Any displacement will, of course, be reproduced in the lower model. This is sawn through at the site of fracture, and the two halves articulated separately to the upper model and joined together. This corrected model is used to construct the splint which, when completed, can only be fitted to the teeth when the fragments have been reduced; conversely, when the splint is cemented into place, a satisfactory reduction has been effected. The splint may be made of silver and gilded. If there is spasm of the muscles which prevents reduction it may be necessary to fix the splint under a general anæsthetic. In this case great care must be taken not to use heat in drying the teeth prior to covering them with cement, for a fatal explosion has been recorded where ether was being used.

In some cases in which the displacement is great and difficult to reduce or the teeth do not afford very secure anchorage, it may be advisable to make a similar splint for the upper teeth. Studs are soldered to the outer surfaces of both splints and the jaws kept closed by means of wire ligatures fastened to the studs.

(*b*) *Fractures of the Body with Absence of Teeth on the Posterior Fragment.*—In these cases the main difficulty lies in effective control of the posterior fragment. A lower metal cap splint covering such teeth as are present should be constructed, and a vulcanite block should be made to fit the alveolar ridge of the posterior fragment (similar to a denture). This can be secured to the cap splint by a variety of mechanical devices. The surface should articulate with the crowns of the upper teeth corresponding to the lower fragment. An upper cap splint is also necessary and the jaws must be kept closed. It may not be possible to reduce any displacement of the posterior fragment which has already occurred, but further displacement will be prevented.

(*c*) *Fractures of an Edentulous or nearly Edentulous Mandible.*—If no teeth are present, the cap splint is useless, and the Gunning splint is the best. This is simply a block of vulcanite fitting both alveolar ridges, or if maxillary teeth are present, fitting over their crowns. The splint is removable and is held in place by a four-tailed bandage. An anatomically perfect reduction may not be achieved, but since the patient is edentulous there is no occlusion to be disarranged, and the worst that is likely to happen is that if the patient wears dentures, fresh ones will be needed later. Since the Gunning splint is only a modified pair of complete dentures, the patient's own dentures, if he has any, may be used as a temporary splint, and may be all that is needed to secure sufficient fixation until consolidation occurs.

Fractures through Ramus or Condyles.

Fractures through the ascending ramus or condyles are rare. A condylar fracture may cause considerable displacement. Double-cap splints should be made and cemented to the teeth, and the jaws kept closed. If the displacement is slight, a four-tailed bandage may be sufficient. A word may be said here as to

[1] Dental Record, 1925.

the use and abuse of the four-tailed bandage. A four-tailed bandage is quite useless where there is displacement of the fragments, since it does not control them, and if union occurs the displacement is perpetuated with disastrous results. As a temporary expedient while splints are being constructed, or as an ancillary measure to provide rest for the jaw after the splint has been adjusted, it is useful. In the comparatively few cases in which displacement is absent the four-tailed bandage may suffice.

Fixation by Interdental Wiring.

A method of treatment applicable to fractures with teeth standing is the application of interdental ligatures of wire fastened to the teeth of both jaws, which are approximated and fixed together. An excellent account of this method will be found in Blair and Ivy's "Essentials of Oral Surgery" (p. 166 et seq.). Briefly, the method is as follows:—

Brass wire such as is used in orthodontic practice is best. A loop of wire is passed between the necks of two teeth from within outwards so that the loop lies externally. The free ends are passed round the necks of the two adjoining teeth through the interdental spaces. The loop is secured by a towel clip and the ends drawn tightly and twisted together *above* the loop in the lower jaw and *below* the loop in the upper jaw. This is done with each pair of teeth in both jaws. The process is tedious, and as it is impossible to avoid pricking the gum, a general anæsthetic may be needed. The mandible is approximated to the maxilla by passing a strand of wire through each pair of corresponding loops and twisting the ends together. The reduction of the smaller and most displaced fragment should be effected last. If complete reduction is impossible owing to muscle spasm, it will be found that in a few days the approximating ligatures can be tightened and complete reduction easily obtained.

The guide to complete reduction is the restoration of normal occlusion. Since there is nothing intervening between the crowns of the teeth, it is possible to get a very good result. The disadvantage of the method is that the jaws must be kept closed for several weeks and the patient fed on liquid diet. On the other hand, the method obviates the need of a complicated apparatus. It is easy to judge of the progress of callus formation without removing the ligatures, whereas with a cap splint, except by taking a radiograph, it is impossible to be certain when consolidation is complete. The method has its uses, but where possible a cap splint should be used, for it interferes less with the patient's comfort.

After-care.

An abscess under the jaw may follow a fracture, and must be treated by incision. Careful attention to the hygiene of the mouth both before fixing the splint and subsequently will often prevent its formation. Some necrosis is almost inevitable. Treatment should be expectant and limited to regular syringing daily. As a rule the sequestra come away without surgical intervention. Careful and regular syringing of the sinus at the site of fracture as well as of the rest of the mouth is essential. An excellent mouth-wash consists of phenol 1 in 80, to which a few drops of tincture of iodine are added. It is, however, the mechanical flushing with fluid rather than the antiseptic which is important. In an uncomplicated case union usually occurs in about six weeks. If there is much suppuration or necrosis which suggests that union may be delayed, it is advisable to take a radiograph before removing a cap splint, since in taking it off it is often spoiled and cannot be reapplied. The patient should be warned that for some months care should be taken not to put any strain on the jaw.

Fractures of the maxilla are treated on similar lines to those of the mandible, except that a single splint applied to the upper teeth is all that is necessary. Fractures of the body of the maxilla do well, but fractures involving the avleolar process often lead to a considerable loss of bone, together with the attached teeth.

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Special Articles.

FŒTAL MORTALITY.
A CLINICAL AND PATHOLOGICAL STUDY.

THE latest addition to the Special Report Series of the Medical Research Council [1] embodies a clinical and pathological study of 1673 dead births and neonatal deaths. It follows on and confirms Mr. Eardley Holland's report "On the Causation of Fœtal Death," published in 1922.[2] The schedule sent out to the coöperating workers asked for details of the health and economic position of both parents, but it was recognised that inquiry into the paternal history was a counsel of perfection, and this part of the problem was not handled seriously. Unfortunately, even the clinical histories of the mothers and their confinements were not all that could be desired, and the authors point out that general deductions must be made with the utmost caution, and plead for a more careful record of hospital cases. A post-mortem examination was made on every child and on every placenta that could be obtained. The high proportion of deformities in the series may, the authors think, be due to the fact that bodies of deformed children are more readily submitted for examination than are normal ones.

The Causes of Death.

A clinical classification was decided on for all cases. The figures from the various centres where the work was carried out—London, Glasgow, Liverpool, Edinburgh, and Cardiff—are tabulated and compared with those previously published by Whitridge Williams in Baltimore, Holt and Babbitt in New York, and McQuarrie in San Francisco. Considering the independence of all these researches the similarity of results is remarkable. In all of them "complications of labour" heads the list, ranging from 22·4 to 37·1 per cent. In the London figures "antepartum hæmorrhage" follows close behind with 22·3 per cent., but the other series rate it much lower in the scale and give a high place to maternal diseases and placental states. Syphilis is the generally accepted third; Holt ascribes only 8·3 per cent. of cases to it, but McQuarrie and Eardley Holland both put the percentage at 15. Running it close come "toxæmias of pregnancy" and after that "fœtal states." The figures are further tabulated and compared according to whether the child died before, during, or after labour. Syphilis, toxæmias of pregnancy, and antepartum hæmorrhage were found to account for a very large proportion of the macerated fœtuses, although the 80 per cent. stated by Whitridge Williams to be due to syphilis proved to be too high for this series. Infections played a large part in the neonatal deaths, killing no fewer than 88 out of 97 cases, if parenchymatous nephritis were regarded as inflammatory. In over half the cases there was some associated maternal condition or complication.

The Mother.

In the absence of histories of mothers bearing live children no absolute deductions could be drawn from the story of maternal illness, but a group of 33 deaths primarily due to maternal states could be separated out. Of these 11 were macerated fœtuses associated with cardiac, renal, and pulmonary conditions, hyperemesis and intussusception. Among the cardiac and renal cases where labour was induced there was a high incidence of tentorial tears and cerebral hæmorrhage. The percentage of dead births in cases of certain maternal syphilis was 28·6, in possible syphilis 59·1. There were many women who had had no dead birth or abortion before the pregnancy under investiga-

[1] Special Report Series No. 109. Eardley L. Holland, M.D., F.R.C.S., and Janet E. Lane-Claypon, D.Sc., M.D. London: H.M. Stationery Office. 1926. 3*s.* 6*d.*

[2] Reports on Public Health and Medical Subjects, No. 7. Published by the Ministry of Health.

tion. Syphilis was sought in 95 cases of toxæmia of pregnancy, but found only in one. It is surprising that one-third of the records give no urine analysis in toxæmia; in the remaining two-thirds albumin was present in all but one of the eclamptics and in all but two of the cases of albuminuria of pregnancy. The placentæ in 31 out of 35 cases showed infarcts with or without clot or hæmorrhages.

The Placenta.

Only 11 deaths are ascribed to placental states, nine of them being macerated fœtuses. The only conditions recognised were infarction and excessively small placenta. Bleeding from the placental site during pregnancy caused 251 deaths, 122 being cases of placenta prævia. No case of placenta prævia occurred among the deaths primarily due to syphilis and there were no signs of syphilis among the 122. There had been signs of hæmorrhage several days or weeks before labour in most of the cases, and apparently little notice had been taken of the symptom. Among the cases of accidental hæmorrhage there was one positive Wassermann only, and in them also the bleeding nearly always appeared first before labour.

The Labour.

The proportion of intracranial tears was high in the 900 non-macerated and non-deformed children, amounting to one-fourth of the cases. Very complex tables are given correlating the tears with the presentation, the method of delivery, and the primary cause of death. By far the greater number occurred in breeches and persistent occipito-posteriors, and in cases associated with complications of labour and syphilis. About one-half of the cases in which forceps were applied had tentorial tears, even if the forceps had only been applied once. Intracranial lesions were found in about one-third of all cases of version.

Contracted pelvis accounted for 175 deaths, and the records show that proper antenatal care would undoubtedly have saved many of these. There were 142 abnormal presentations and 58 difficult or prolonged labours, half of the latter being in primiparæ. Prolapse, coiling, or knotting of the cord appeared to be the primary cause of 41 deaths; these presentations were nearly all vertex.

Fœtal Deformity and Prematurity.

One hundred and thirty-eight cases fell into this section, 25 of them being macerated and 21 alive at birth; 40 per cent. were full term and there was the usual high proportion of breech presentations. In 47 instances there was no apparent cause of death other than prematurity; in 22 of these there was asphyxial cerebral hæmorrhage, and in 10 there were other hæmorrhages as well.

Unknown Causes.

When the classification was complete there remained over 40 macerated fœtuses, 36 fresh dead babies, and 30 neonatal deaths. The age at birth, at death, the weight and the length varied and offered no points for attention. The urine of the macerated fœtuses contained sugar in two cases and a trace of albumin in three.

Eighteen of the placentæ were normal, while 21 showed infarction or fibrosis. Where the previous obstetric history was recorded 37 were primiparæ, 35 had had no previous dead birth, while 16 gave a history of stillbirth. Of these 106 cases no trace of any cause could be assigned in 56, but in 35 there was more or less asphyxia.

Conclusions.

The authors feel that there is no doubt that maternal morbidity is closely related to fœtal and to maternal mortality, and their results show that not less than 25 per cent. and probably more of all dead births are due to manipulations. Therefore the only line of prevention is that of adequate antenatal supervision.

RESEARCH IN MENTAL DISEASE.

THE output of research on mental disease is steadily increasing year by year. Naturally a large proportion of the work comes from the special research institutes, whose equipment and endowments make the way smooth, but it is encouraging to note how many of the mental hospitals contrive, although handicapped by inadequate laboratory facilities and a great quantity of routine work, to publish research notes of real significance.

Basal Metabolism.

The Joint Board of Research of the City and University of Birmingham, in its report for the year ending March, 1926, records much detailed work on basal metabolism, and the figures of 29 experiments on patients and 53 on controls are published, preliminary to discussion. The work has shown the great importance of conscious and unconscious muscle-relaxation, which has not, perhaps, been taken sufficiently into account in previous statistics of the bag-methods. A normal person sitting completely relaxed may show a metabolic rate lower than that usually regarded as evidence of hypothyroidism.

Malarial Treatment of General Paralysis of the Insane.

It is now nearly ten years since Wagner-Jauregg, experimenting with all kinds of non-specific protein irritants, decided that the reaction to benign tertian malaria was more efficient than that shown to any other substance in relieving the symptoms of general paralysis of the insane. He published the results of the treatment in over a thousand cases, and since then a large number of patients in British mental hospitals have been treated. The annual report of the Board of Control provides an opportunity for reviewing their results. In Birmingham 12 cases have been treated, 8 with mosquitoes and 4 with malarial blood; the incubation period varied from 3 to 25 days. Two patients died from lung conditions, and seven were definitely worse mentally during the febrile period. Four bedridden patients were sufficiently improved to get up and help in the wards, and two less advanced patients have recovered sufficiently for discharge. One case was worse mentally after the treatment, but showed physical improvement, while mental improvement was always accompanied by amelioration of the physical condition. Fine movements became better coördinated, but the reflexes did not improve. The colloidal gold test and blood Wassermann remained unaltered, but the cerebro-spinal Wassermann was always considerably reduced and in one case became negative. At Wadsley (Sheffield) examination of the cerebro-spinal fluid showed that the specific reactions were reduced in a large percentage. At Whittingham it was found that the Braun-Husler and acetic-anhydride reactions were generally positive before malarial treatment and negative after it. The Birmingham investigators note that all 12 cases had advanced disease of the teeth and jaws, 3 had buried tonsillar abscesses, and 7 gave evidence of old disease of the maxillary antrum. They attach considerable therapeutic significance to the removal of these foci of sepsis, and discuss the effect of their presence on the malarial treatment.

At the Cardiff Mental Hospital 14 cases have been treated by subcutaneous injection of whole or defibrinated malarial blood; 3 showed physical but no mental improvement, and 4 recovered sufficiently to be discharged to work in a subordinate capacity. The longest remission so far on record has lasted for two years. Whittingham has transmitted a benign tertian strain through 60 generations by direct subcutaneous inoculation, and can supply it to hospitals requiring it. The strain has been carefully studied morphologically, and appears quite unchanged, and to have undergone no increase in pathogenicity

or virulence. Five rigors have been found quite enough; 117 cases have been treated, and of these 27 have been discharged apparently well, some of them over two years ago; 17 are earning their living. There were 20 deaths out of the 117 treated. The medical officer deprecates the use of mosquitoes for infection, as the percentage of malarial relapses is 55 per cent. with the insects and less than 2 per cent. in his series. Patients who have relapses in their own homes may spread the disease.

At Winwick (Lancashire County Mental Hospital) 7 cases were discharged out of 63 treated, and 7 more were considerably improved. Both here and at Claybury the existence of an acquired immunity has been established. Inoculations of relatively immune patients by mosquitoes instead of blood slightly lowered their resistance, and a new strain invalidated it. It had no relation to the number of rigors in the primary attack or to the blood grouping of donor and recipient.

At the Claybury Mental Hospital also workers have perfected a freezing method whereby defibrinated malarial blood can be sent by post to districts requiring it (THE LANCET, 1925, i., 793), and have investigated the blood of patients under malarial treatment. There is a preliminary erythrocytosis in all cases, followed by an anæmia which within three weeks gave way to another erythrocytosis. The hæmoglobin varied with the blood cells, and the number of parasites varied with the temperature. Sometimes there was a great destruction of parasites during the fever.

At Severalls (the Essex County Mental Hospital) malarial blood injection is routine for all early cases: 18 have been treated, of whom 1 died, 3 were greatly benefited, and 6 were discharged; 4 of the latter earn their living. At the Sunderland Mental Hospital 14 unselected cases were inoculated subcutaneously with malarial blood from Whittingham, and were allowed to have ten rigors. There was one death from pneumonia, one case of jaundice, and two instances of great improvement. At the Leicester City Mental Hospital trial has been made of malaria for neurosyphilis, but no benefit resulted.

Intestinal Infections.

Twenty-three per cent. of the supposedly healthy transfer-admissions at Wakefield Mental Hospital were found to give a positive Flexner agglutination, pointing to the risk of mixing transfers from other mental hospitals with healthy patients. Anti-dysenteric vaccination was used with great success. A number of other hospitals have investigated the whole question of typhoid and dysentery as the result of outbreaks in their wards. At Parkside the cases of intestinal disorder were found to fall into two groups, due respectively to infection by Flexner bacillus and by *Streptococcus fæcalis*. Arising out of a typhoid investigation at Birmingham, a number of agglutination tests have been carried out, and these figures also are published in the annual report of the Joint Board of Research. They show that many patients must have been infected at some time in their lives. Many fæcal specimens showed organisms of the paratyphoid group which did not agglutinate with the virulent types, and it seems probable that much chronic ill-health may be caused by these varieties. The bacillus of Friedländer was found in 54 per cent. of the patients at Rubery Hill, at one time or another, with a distinct seasonal rise in September and October.

At the laboratory of the Scottish Western Asylums Research Scheme much work has been done on these infections. An intestinal epidemic at Smithston Asylum was traced to a urinary carrier after about 400 specimens of excreta had been examined without result. At Dykebar a persistent carrier was found with no history of any illness related to typhoid. The report of this hospital endorses the recommendation of the Scottish Board of Health that every new patient in an institution where typhoid has occurred should have the blood examined for the Widal reaction on admission.

Septic Foci.

The Birmingham investigators found diphtheroid organisms and streptococci within the cervical canal in a large proportion of 250 female cases examined on account of gynæcological disturbance. Brain material was mostly sterile, but streptococci were found in a few specimens. An attempt is being made to correlate the bacteriological, biochemical, and histological investigation of post-mortem material. The Scottish Western Asylums laboratory found bacterial infections of the urinary tract in a good many patients, and distinct mental improvement followed their effective treatment. The laboratory of the Scottish Asylums Pathological Scheme has published work on the paths of infection to the brain, meninges, and venous blood sinuses from neighbouring peripheral foci of inflammation (*Journal of Laryngology and Otology*, xli., 1926).

Drugs.

At Birmingham experiments on animals with hypnotic drugs have been continued, and striking histological changes in the white matter of the central nervous system have been demonstrated. Mucoid bodies, resembling but not identical with amyloid, can be produced at will by oral or subcutaneous administration of these drugs, and are associated with changes which suggest alteration in the metabolism of the neurones. The permeability of the brain membranes in general paralysis of the insane and in animals has been investigated, and there seems hope that the prognosis may be guided by the permeability ratio. Papers dealing with the estimation of iodine in thyroid were published during the year. Septic infection and tuberculosis were shown to be accompanied by great variation in the iodine content.

Workers at the West Park London County Mental Hospital are convinced that hyoscine has a specific beneficial action in encephalitis lethargica, and that its prolonged use does no harm. They make the interesting suggestion that the hysterical symptoms in this disease, and perhaps in other conditions, too, are due to lesions of the basal ganglia.

Investigations on the Blood in Mental Disease.

A biochemical study at Whittingham showed no evidence of poisoning by bilirubin pigments, and established that the fat content was normal. All new admissions at Cardiff are tested by the van den Bergh test for bilirubin. Non-protein nitrogen was found higher than normal in 12 out of 16 Whittingham cases of melancholia. Research at the East Sussex County Mental Hospital revealed a hypocholesterinæmia in a number of dementia præcox patients. The blood calcium in 50 new admissions was found remarkably constant. The Cardiff City Hospital found that phosphorus in plasma and cerebro-spinal fluid did not differ in quantity amongst psychotic patients from that normally found in controls. Calorimetric investigations at the Maudsley Hospital and at West Park showed that a constant diminution in the peripheral flow followed emotional or intellectual stress and painful stimuli, amyl nitrite usually produced an increase and adrenalin a prolonged diminution. 1338 blood-pressure readings taken at Parkside (the Cheshire County Mental Hospital) showed that the systolic pressure is higher in melancholia than in the depressed phase of manic-depressive insanity, and raised in catatonia, and in all cases in response to agitation and excitement. If these emotions were prolonged, however, the pressure fell. In all groups the diastolic pressure varied within much narrower limits than the systolic. Radiant heat baths caused a marked fall, with a lesser fall in the systolic.

Carbohydrate Metabolism.

At Cardiff a large number of experiments were carried out on rabbits to obtain an average sugar-curve after the intravenous injection of adrenalin and to study the modifications of the curve produced by the previous injection of other substances. It

was found that thyroxin raised the adrenalin-sugar curve, while calcium chloride diminished it. Thyroxin and calcium together reduced the adrenalin and thyroid curve, but raised the adrenalin and calcium curve. At Whittingham it was found that the sugar content of the blood was normal in most cases, but that it was high in melancholia and low in epilepsy. The majority of post-encephalitic cases at West Park showed a hyperglycæmia after glucose injection; depression and stupor were associated with most profound abnormalities of carbohydrate metabolism, but the clinical pictures could not be correlated with the types of blood-sugar curve. It is possible that these curves may have a prognostic significance, and they can be brought nearly to normal by hyoscine. Staffordshire also found great variations in the carbohydrate metabolism, especially in cases with confusion or depression. Low sugar-tolerance was most often found in recent melancholia.

Epilepsy.

At Burntwood, the Staffordshire County Mental Hospital, it was found that extra carbohydrate in the diet made no difference, so that acidosis does not appear to be an important factor in this disease. Luminal was used on carefully-watched cases at the Devon County Mental Hospital, where they found it valuable but not in any sense a "cure." Hypodermic injections of luminal sodium were found at Rainhill to give very promising results in status epilepticus. At Sunderland allonal was tried, but without success.

Ultra-violet Light.

At Parkside the value of ultra-violet rays was investigated on 50 patients; there was marked increase in the weight, appetite, muscular activity, and cheerfulness. Manic-depressive cases and mild melancholias responded best. Deluded patients were less harassed and became more amiable. Dementia præcox was little affected, and melancholias with agitation and hypothyroidism were aggravated. There was no constant change in the metabolic rate, but the systolic blood pressure was slightly decreased. The results of radiant heat baths were examined in 72 subjects from among patients and staff, and it was found that sweating was considerably delayed in dementia præcox and slightly accelerated in maniacal patients.

Pellagra.

The Lancashire County Mental Hospital at Rainhill reports the case-histories and autopsies of two cases of pellagra, which brought the total number of known cases in this hospital to 56. One case was first diagnosed as myxœdema, and thyroid atrophy was found post mortem. Pellagra is also the subject of a study by the Herts County Mental Hospital, St. Albans, where seven cases were recognised during the last 14 years. In this series food deficiency seems to have played an important part, and it is suggested that the achlorhydria may permit proliferation of gastro-intestinal organisms with selective toxic action on the posterior and lateral tracts of the cord.

Miscellaneous.

Workers at the London County Mental Hospital, Long Grove, found measurable quantities of cholesterol in the cerebro-spinal fluid in 30 cases of general paralysis, but not in any cases of dementia simplex, dementia præcox, or epilepsy with insanity.

From West Park were published the results of research on laboratory aids to diagnosis. They consider that the serum Wassermann reaction should be a routine measure in all cases, and that where syphilis of the central nervous system is suspected the cerebro-spinal fluid should also be examined. Early diagnosis and treatment of the supporting and nutritional tissues of the central nervous system may prevent it from passing on to incurable disease of the parenchyma. They point out that no single reaction is pathognomonic of any particular disease, and that several tests must be performed and the clinical findings and therapeutic results taken fully into account. The acetic anhydride-sulphuric acid test was found almost as reliable as the Wassermann reaction in the diagnosis of general paralysis.

Renal function tests are being extended at the Devon County Mental Hospital in order to estimate the significance of albuminuria. In the diagnosis of neurosyphilis it appeared that the globulin reactions were reliable, as well as being easy to perform. Unna's polychrome methylene-blue was found better than the ordinary stain for cytological examination.

MEDICINE AND THE LAW.

The Check on Judicial Reports.

THE Judicial Proceedings (Regulation of Reports) Act, which became law on Dec. 15th, is of no small concern to the readers and writers of medical books and articles. It is true that there is a saving clause for "any publication of a technical character bona fide intended for circulation among members of the legal or medical professions," and that the recognised law reports will be published as before; but the medico-legal student who has been accustomed to find much relevant material in the daily newspaper may have in future to look elsewhere. The Act forbids the printing or publication "in relation to any judicial proceedings" of "any indecent matter or indecent medical, surgical or physiological details being matter or details the publication of which would be calculated to injure public morals." Limits are also imposed upon the reporting of divorce court proceedings. Breaches of the new Act are punishable on summary conviction, but no one is to be prosecuted without the Attorney-General's consent, nor can anyone be convicted except a proprietor, editor, master printer or publisher.

Time alone will show whether the results of the Act will be as excellent as its purpose, and whether the haste with which it was passed into law will be justified. Already the President of the Divorce Court has felt himself obliged to deliver a much fuller judgment than he would otherwise have done, so as to ensure publicity for the particular point he was deciding. Indeed, the administration of justice may be incompatible with secrecy. Well-intentioned legislators inserted in the Punishment of Incest Act of 1908 a section enacting that "all proceedings under this Act are to be held *in camera*." Time passed, and judges found that this want of publicity was keeping the country in ignorance of the criminality of an odious offence. In 1922, after a series of judicial recommendations, the section was repealed. The non-admission of the public to a court of law may, of course, often be justified. For reasons of State a trial under the Official Secrets Act, and for other excellent reasons an application under the Adoption of Children Act or the Guardianship of Infants Act, may be heard in private, while the Children Act of 1908 empowers the clearing of the court when a child is giving evidence of a certain nature. The regulation of reports, a course which many advocated after the publication of the proceedings in Russell *v.* Russell, is a further step. Some think a less drastic course might first have been tried—for example, judges might have been authorised by Parliament to declare in any particular case that no report should be published until the conclusion of the trial. This proposal might have checked sensationalism, and certainly, where baseless allegations had been made, it would have given the answer simultaneously. The Judicial Proceedings (Regulation of Reports) Act, however, is now the law of the land and must be obeyed. We may expect many metaphysical discussions when magistrates are asked to say whether medical, surgical, and physiological details are indecent and injurious to public morals.

Commencement of Acts of Parliament.

In view of the recent error of the Home Office—or, at any rate, of the learned counsel who prosecuted in the Kynaston case—in invoking the aid of an Act

of Parliament which was not yet in force, the medical profession may care to note those statutes of the recent session which have a postponed date of operation. A group of three come into force on New Year's Day; they are the Lead Paint (Prevention of Poisoning) Act, the Adoption of Children Act (for which the Lord Chancellor has just made three sets of rules of procedure for applications in the High Court, county court, and magistrates' courts respectively), and the Midwives and Maternity Homes Act—or, rather, that part of the last-named Act which deals wth the registration of maternity homes, the clauses amending the law as to midwives having taken effect last August. The new Coroners (Amendment) Act does not come into force till May 1st. Three other Acts are delayed until July 1st, 1927. These are the Public Health (Smoke Abatement) Act, the Births and Deaths Registration Act, and the Legitimacy Act. All the above-mentioned statutes have a fixed date; they do not require the elastic, but uncertain, method of fixing an "appointed day" by Order in Council or otherwise. Examples of this vaguer method are rare in the legislation of 1926, but one of them is the Fertilisers and Feeding Stuffs Act, which is to come into force on such date, not earlier than July 1st, 1927, as may be determined by the joint decision of the Minister of Agriculture and the Board of Agriculture for Scotland. This Act, rather more elaborate than the previous Act of 1906, which it is to supersede, is designed to check adulteration of poultry and cattle food and of soil fertilisers; it contains formidable lists of chemical substances, and is likely to provide analysts with additional employment.

The Lead Paint (Protection against Poisoning) Act.

The Lead Paint (Protection against Poisoning) Act, 1926, will come into force on the first day of the New Year. On and after that date every medical practitioner attending on, or called in to visit, a patient whom he believes to be suffering from lead poisoning contracted in or in connexion with the work of painting buildings, is required to send to the Chief Inspector of Factories, at the Home Office, London, S.W. 1, a notice stating the name and full postal address of the patient. In respect of every such notice he is entitled to a fee of 2*s.* 6*d.*, and for failing to send such notice he is liable to a fine not exceeding 40*s.*

THE MEDICAL INSURANCE AGENCY.

THE Committee of Management of the Medical Insurance Agency met at the House of the British Medical Association on Dec. 8th, Sir Humphry Rolleston in the chair, when an interim report was received, covering the activities of the nine months ending Sept. 30th and showing progress in various directions. Notably the Agency, through recommended policies, had completed 162 proposals representing £148,176, the largest figures yet recorded. The premium income on motor-car insurance had increased by over £1000, progress had been maintained in household, fire, and burglary insurance, and in accident and sickness insurance, while disputes in regard to settlements have been few.

A discussion took place as to the manner in which the Agency could best be of assistance to the Council of Epsom College when it was resolved to subscribe to the Foundation a sum of 200 guineas, being the amount required to obtain the maximum number of votes under the existing by-laws of Epsom College. It was further resolved that if the by-laws should be suitably altered or modified the Agency would consider a substantial increase of subscription, and that "pending the consideration by the Council of Epsom College of the advisability of altering or modifying the by-laws to meet the difficulty of allocating proportionate votes to subscribers of large and regular sums, the Committee of Management place a sum of £100 at the disposal of the headmaster of Epsom College for the purpose of assisting to defray the cost of education of deserving boys who are the sons of deceased or disabled medical men or women."

The following grants were made to medical charities in respect of the year 1926:—

	£	*s.*	*d.*
Royal Medical Benevolent Fund	525	0	0
Royal Medical Benevolent Fund Christmas Appeal	105	0	0
Royal Medical Benevolent Fund Guild	525	0	0
Royal Medical Foundation of Epsom College (in pursuance of Minute 17)	210	0	0
Headmaster Epsom College (in pursuance of Minute 18)	100	0	0
M.I.A. Girls Education Subcommittee	210	0	0
B.M.A. Charities Committee (to be paid in 1927)	157	10	0
Royal Home for Incurables, Putney	52	10	0
Royal Medical Benevolent Fund of Ireland	26	5	0
	£1911	5	0

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Poor Relief to Miners' Dependents.

ON Dec. 15th Lord Constable pronounced judgment in the Court of Session, in the note of suspension and interdict at the instance of certain owners and occupiers of land in the parish of Dalziel (Lanarkshire), against the parish council of Dalziel. Since May, 1926, the respondents had been making payments for the relief of the wives and children of miners who were out of employment in consequence of the dispute in the coal trade, and the purpose of the action was to test the legality of these payments. After a long and carefully argued hearing, Lord Constable found that the payments were "unwarranted and contrary to law, but saving always and without prejudice to the statutory power of the Board of Health to abstain from disallowing or surcharging such payments."

This decision affects the whole administration of Poor-law relief in Scotland, for the case was brought in order to ascertain the law. The decision, in effect, brings the position within the ordinary administrative procedure of the Board of Health in cases where payments made are found at audit to be illegal; the Board can surcharge the members of parish councils or not as it considers just. While, therefore, the payments, which were made in accordance with the circulars of the Board, were found to be illegal, this does not necessarily mean that the parish councils will be surcharged. Even if this were likely to happen, the whole position is changed by the announcement made on Dec. 18th from the Scottish Office: "The Government has considered the position created in Scotland by the judgment of Lord Constable. The Government has decided that it will be necessary, immediately Parliament reassembles, to introduce a Bill to legalise the payments made by parish councils for this purpose during the recent dispute."

So far as the past is concerned, therefore, the large expenditure incurred by the parish councils will pass on to the plane of ordinary expenditure; but the problem of what will be done in future stoppages remains. A man on strike is not unable to find work in the sense of the 1921 Scottish Act, and is, therefore, not entitled to relief under that Act. If he is able-bodied he is not entitled to relief under the ordinary Poor-law Act of 1845. The decision definitely shuts out also his dependents from relief under either Act. But the payments have been made to the tune of several hundred thousands of pounds. This decision is far reaching. It certainly clears the position for both the Board of Health and the Parish Councils.

Medical Symptoms and Surgical Operations.

On Nov. 30th Mr. A. Ernest Maylard read a paper before the James Mackenzie Institute, St. Andrews, on the Bearing of such Conditions as High Blood Pressure, Glycosuria, and Albuminuria on the performance of Surgical Operations. In high blood pressure, he said, it was not so much the symptom itself that demanded consideration as the condition on which it depended; for where the rise in pressure was due to

disease of kidney, heart, or arteries, grave lesions connected with these structures introduced factors of greater moment than the symptom they produced. Apart from exceptional cases, where the systolic pressure exceeded 240 mm. of mercury and the diastolic exceeded 140, the risks connected with operation appeared to be negligible. Dr. Charles Moots, of Toledo, U.S.A., suggested for practical purposes that in each case the pressure ratio should be considered. This was found by dividing the pulse-pressure by the diastolic pressure; it was considered "ideal" when it stood at 50 per cent., but when below 25 per cent. or above 75 per cent. it was "very grave." Mr. Maylard thought that there was no very serious risk or impediment to the performance of operations on patients suffering from glycosuria, as represented by diabetes, as was best illustrated by the success that had attended amputations for diabetic gangrene. Inasmuch as the disease could be very definitely controlled, and the patient benefited by the pre-operative administration of insulin, operations of expediency could be undertaken without any fear of untoward results; experience further proved that wounds healed as well as when the patient had no such disease. In considering albuminuria as it affected operation, more attention must be directed to the cause of the symptom than to the mere presence of albumin in the urine. Reason would suggest that when it was dependent on a pathological condition of the kidney, the gravity of an operation would be greatly increased; but experience indicated that unless the disease of both kidneys was very advanced, but little risk was added to the performance of an operation. Albumin in the urine dependent on most other conditions, and particularly when only a trace was present, was practically of no moment, even where an operation was no more than expedient.

UNITED STATES OF AMERICA.

(FROM AN OCCASIONAL CORRESPONDENT.)

Cancer and Heredity.

AT the recent Montreal Congress of Surgeons Dr. William J. Mayo suggested that the degree of malignancy might be attributable to the diminished activity of immunising processes rather than to the nature of the activating agent. Dr. Maud Slye, as the result of experiments on mice, concludes that the resistance and susceptibility to cancer are transmitted as simple Mendelian units, as is also the site of occurrence of the lesion, but that these may be modified by selective breeding. Similar conclusions were reached as regards cancerous metastasis. As an outcome of her experiments susceptibility is the recessive, resistance the dominant character. In mice the first cross between dominant and recessive types did not produce cancerous offspring. Chronic leukæmia in mice followed the same rules of heredity as cancer followed. Speaking a few days ago at the convention of the Logical Society held in Milwaukee, Dr. Slye gave it as her opinion that mating based upon a knowledge of heredity and eugenics would eliminate cancer from the human spcies in two generations. If the knowledge were available, any individual who knew himself to be by heredity susceptible to cancer could, by mating with a non-susceptible individual, prevent the occurrence of cancer in their children.

The American Red Cross Society.

The annual report of this society directs attention to the increasing toll of life taken on the highways through motor-car accidents, which has brought home the need for instruction in first-aid to all who drive or ride in motor-cars. Owing to the modern vogue of outdoor amusement and the desire for fresh air, new problems had arisen owing to large numbers of people playing or living at a distance from medical men and hospitals. No difficulty had been experienced in promoting first-aid instruction, the problem rather being to find ways and means of fulfilling the requests received for service. In many high schools, first-aid service was now included in the curriculum; to assist in the training of teachers special courses were conducted at the summer schools of the Universities of Maryland and Virginia. At the University of Kentucky, Temple University, Peabody Teachers' College, and some other institutions classes in first-aid went on throughout the year. In industrial life and on the railroads first-aid instruction is becoming universal. Another developing Red Cross activity is the "nutrition service."

Study of Criminals.

In a report just issued by Mr. Frank E. Wade, a member of the New York State Commission on Prisons, the New York County Penitentiary is condemned from almost all points of view. One reason for severe criticism is that in 1917 the penitentiary was designated as a clearing-house to provide psychiatric and medical clinics, combined with good hospital and detention accommodation, but these plans were never carried out. Almost one half of the multitude of minor offenders passing through this institution have some physical disability, apart from the mental disabilities which press for better diagnosis and understanding. In discussing the drug addicts, in all numbering 1111—of whom 701 were sentenced for being in possession of drugs, 193 were self-committed and 217 sentenced for crime—the report states that the present management of these cases is less humane than formerly. When transferred to Riker's Island, as used to be the case, they were segregated, were in the open air, and had some treatment and care of a special character adapted to their condition. At present they are treated as common criminals. Commissioner Wade regards such treatment as unjust when dealing with addicts who are self-committed or have no criminal record other than being in possession of drugs. Non-criminal addicts, he holds, should be committed to a public hospital, not kept in prison.

PARIS.

(FROM OUR OWN CORRESPONDENTS.)

Medical Education.

A RECENT decree is proving rather severe on French medical students. Until recently students failing in one subject of the final examination were allowed to take this subject alone after the lapse of a few months, being credited with having passed the rest of the examination. The new rule is that candidates will only be allowed to do this if they have reached 70 per cent. of the possible marks in the subjects in which they passed; otherwise they must take the whole examination all over again. Illness sometimes leads to failure in a single subject, and many unfortunate students may have to spend an extra year at work owing to this rule, which will be serious if they have little money. The Minister of Public Instruction is carefully considering the students' side of the question. It must be admitted that insistence on high standards is very desirable, but the ruling should be elastic enough to permit just consideration of hard cases.

A report by Prof. Weiss to the Académie de Médecine suggests that students should spend more time on the preliminary scientific subjects—physics, chemistry, and biology—and recommends that medical schools should provide a special pre-medical education. Everything superfluous, he says, should be rigidly excluded from the curriculum, and laboratory instruction should be used extensively.

Treatment of Sleeping Sickness.

The drug known as "270 Fourneau" has proved valuable in the treatment of sleeping sickness, in tests made at the Pasteur Institute at Brazzaville, in the French Congo. Its effects are specially manifest in the second stage of the disease. The

initial dose should not exceed 0·3 g. per kg. body-weight, but may be gradually raised to 0·7 g. The amount given must be considerably reduced during the late second, and in the terminal, stage of sleeping sickness. Administration is subcutaneous.

Antityphoid Inoculation.

A Bill is being presented to the Senate for rendering antityphoid inoculation obligatory for all French citizens. No penalties for failing to comply with the law have so far been provided.

Cabanès has been examining the hereditary characters of the Hapsburg dynasty, which include prognathism, hypertrophy of the nose and lower lip, and acrocephalia. These stigmata, he finds, have been transmitted notably in the direct line, and are more distinct in the males.

Since dealers are not always above suspicion of favouring rises in the price of food-stuffs, legislation is being introduced providing penalties for those who waste food or wilfully allow it to spoil. The penalties provide for fines ranging from 100 to 30,000 francs, and for imprisonment for periods of eight days to three years.

In order to encourage the growing of medicinal plants in France and in the French colonies a cinematograph film has been prepared at the instance of the Minister of Agriculture.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are the 1925 statistics of the City of Liverpool and six counties :—

Name of district	Estimated mid-year population (R.-G.).	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.	
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Heart disease.	Infant mortality.	Maternal mort. from childbirth.
Liverpool ..	842,968	23·3	14·1	1·52	1·18	3·5	1·1	99	2·9
Kent	1,110,500	16·5	11·5	0·90	1·43	1·8	1·7	56	2·8
Staffordshire.	722,000	21·0	12·0	0·93	1·09	2·6	1·4	82	3·1
Cheshire ..	645,900	16·0	11·8	0·79	1·33	2·1	1·7	73	4·8
Norfolk ..	322,600	16·7	12·2	0·77	1·73	1·9	1·8	54	2·4
Leicestershire	274,600	17·7	11·4	1·00	1·20	1·9	1·6	71	4·7
Cambridgeshire*	70,270	15·6	12·1	0·78	1·79	1·9	1·9	55	2·7

* Excluding Cambridge borough.

Liverpool.

Dr. A. A. Mussen describes how the Schick test and subsequent immunisation were successfully used to end outbreaks of diphtheria in four residential institutions. The notifications of encephalitis lethargica numbered 108 as compared with 189 in 1924. The deaths, however, were more. Eight of the deaths were those of persons notified in earlier years, but excluding these the case fatality in 1925 was 33·4 per cent. During 1922 and 1923 the choreiform type was prominent, but during 1925 the lethargic type predominated again. Half the cases occurred under 30 years of age, and there were few cases over 60. The fatality increased with advancing age, but the smaller fatality in youth is offset by the liability to develop sequelæ. Cases are cited to indicate the infectious nature of the disease. Thus 17 per cent. of the acute cases in Liverpool during 1925 had a possible connexion with a preceding case. In 1924 and 1923 a similar possible connexion was traced in 17·7 per cent. and 9 per cent. respectively. From the consideration of such groups the incubation period is thought to be from a week to a fortnight. The occurrence of cases in contacts, after five months in two cases and after 20 months and two years in two other cases, indicates the possible duration of infectivity for prolonged periods. Of the 22 cases which occurred among school-children during 1925 two proved fatal, and of the survivors 14 are known to have developed sequelæ. In seven of these the prominent symptom was inversion of the sleep rhythm, in four Parkinsonism, and in three mental deterioration. Dr. Mussen suggests that such survivors should at first be taught in special classes in the schools for physically defective children, but kept quite apart from the other physically defectives. If experience shows such treatment to be unsatisfactory, residential treatment in conjunction with other local authorities may have to be considered. Home contacts are now excluded from school for three weeks.

Five cases of anthrax occurred, with two deaths. Two handled wool in a warehouse, two worked among wool and hides at the docks, and one in a tannery. Fur dermatitis from rabbit skins dyed to resemble beaver is reported to be increasingly common. In the dyeing process an oxidising agent is used, and if oxidation is complete the dyed article is innocuous. The skin irritation caused may be very severe and may become eczematous. At the Fazakerley Hospital success has been obtained in the immunisation of the staff against scarlet fever. The Schultz-Charlton reaction has been in general use since December, 1924, for diagnostic purposes, and the use of specific anti-streptococcus serum in the treatment of scarlet fever appears to give good results. Also passive immunisation by scarlatinal antistreptococcus serum is found to be of value in preventing cross-infection.

A table shows that an increase in the routine veterinary inspections of the city herds reveals more cases of tubercle of the udder. There are 286 city cowsheds, with accommodation for 3870 cows. In 1920, 56 routine inspections discovered six cases of tubercle of the udder, while in 1924 and 1925 there were 697 and 717 inspections, and 26 and 21 tuberculous udders discovered respectively. The city bacteriologist reports that of 172 samples of milk examined for the city hospitals 14 contained the tubercle bacillus, and that seven out of 84 samples from infant welfare centres and 63 out of 586 samples from milkshops, railway stations, &c., were tuberculous. An advance has been made in housing matters by the scheduling of Pitt-street area. A confirming order was made by the Ministry, and the buildings are now being demolished, and plans have been approved for the erection of 57 tenements on the site. Despite the operations of the housing committee and the activity of private builders, who during the last five years have erected 8122 dwellings, there were over 11,000 applications for corporation dwellings on the waiting list at the end of 1925.

Kent.

Dr. Alfred Greenwood describes the growth of the county pathological laboratory, which was established in 1911 with the intention primarily of carrying out simple bacteriological examinations for district medical officers of health. The work has been gradually extended, until at the present time almost every kind of pathological work is done at Maidstone for the medical practitioners of the county. In addition to the ordinary examinations for infectious diseases, the work now includes examinations of urine and pus, histological examination of tissues, tumours, &c., with supply of sections if required, blood examinations, blood counts, blood sugar tests. A whole-time pathologist is employed. During the year ending 1926, 21,784 specimens were reported upon. The charge on the county rate for the laboratory for the year was £1663, and the average cost per examination 1*s.* 6*d.* Dr. Greenwood emphasises the fact that the laboratory has been well worth while

especially in a county like Kent, where there is no university or commercial laboratory available.

The clean milk competition was continued successfully during 1925, and the reports from the districts show the need for it. Little, if any, veterinary inspection of cows appears to be in operation, and only 25 samples of milk were sent to the county laboratory to be tested for tubercle, including one sent on account of a complaint of tuberculous milk from the medical officer of health of the London County Council. The arrangements for the reception of the Kentish hop-pickers are being greatly improved year by year, but there still remains a minority of growers who are not amenable to reason in this matter. The reports from the districts show that many improvements have been made during the last five years in drainage, sewerage, and the prevention of the pollution of rivers. As regards scavenging, however, Dr. Greenwood mentions that among his 42 urban and 23 rural districts it is the exception to have a thoroughly well-organised and up-to-date method of disposal, and that in the majority of the urban districts there is no justification for this. The nuisance from the tipping of London refuse has been lessened in recent years, but several of the rural districts suffer from the deposit of refuse by the Kentish towns. A duel is reported between Southborough and Tunbridge Wells. Southborough deposits its refuse and creates a fly and rat nuisance in Tunbridge Wells. Tunbridge Wells returns the compliment. An amicable arrangement for a joint destructor for these two urban districts may be the result.

Taken as a whole, the housing situation does not improve. Thus the shortage estimated in 1922 at 5554 is estimated in 1925 as 9742.

Staffordshire.

Dr. W. D. Carruthers gives a survey of the position as regards the pollution of rivers. Three-quarters of the county is within the watershed of the Trent. The narrow strip along its north-western border is within the watershed of the Mersey, and further south there is an area draining into the Severn. The Trent and its main tributary, the Tame, are heavily polluted in the industrial areas of the county. The same remark applies to the Stour, which drains into the Severn. The standards recommended by the Royal Commission assume that an effluent will be diluted eight times by river water on its discharge, but this does not occur in the industrial areas of Staffordshire, and Dr. Carruthers urges that a higher standard of purification is, therefore, necessary. He also emphasises the bad effects when the river water is completely held up by a weir, making the basin above the weir practically a septic tank, and interfering with the natural power of recovery. Tables are given showing the percentage of oxygen saturation of the rivers Trent and Stour at various points, which make it clear that these rivers are usually too much polluted to support fish life. Many of the authorities in Staffordshire are quite alive to the situation, and a considerable amount of work has been done, but obviously much more is required.

Building during the last five years has only been sufficient to meet the natural increase of the population. Dr. Carruthers hopes that the new Act, which allows assistance from the public funds for the improvement of existing cottages, will help to find houses for the agricultural workers at something like an economic rent. The county council has not appointed whole-time veterinary surgeons to deal with tuberculous milk, but has allocated this work to the officers appointed under the Diseases of Animals Acts. During 1925 six complaints of tuberculous milk were received from the London County Council, and in each case animals were slaughtered under the Tuberculosis Order. One complaint from Stoke had a negative result. At the end of 1925 there were four licences for the production of Grade A milk. One of these four producers could not comply with the standard, and it was found that his bottles would not stand being put in the steriliser without cracking. Dr. Carruthers points out that two small-pox hospitals would serve the whole county, and that seven others might be abolished. There were 45 cases of encephalitis lethargica and 26 deaths during 1925. About 35 per cent. of the county population are without satisfactory isolation hospital provision. The bacteriological work of the county was transferred from Birmingham University in July, 1922, and a county laboratory has been established at the Wolverhampton General Hospital.

Cheshire.

Dr. Meredith Young states that the greater portion of the county comes within the maternity and child welfare scheme. There are seven county midwives, who are granted an allowance of £60 per annum in addition to the fees which they earn until they have a practice sufficient to support them. Through the enterprise of the county nursing superintendent a Cheshire Midwives Association has been formed, with seven branches, each of which has a series of monthly lectures. The shortage of houses interferes with the character training of children. The mothers who live in rooms say they have to give a child anything it wants to keep it quiet. The shortage of houses is general, but the local authorities are said to be facing the problem in a satisfactory manner. Constant supervision has been maintained over the Dee, Weaver, and Dane, and all these rivers are fit for fish to live in. The greatest difficulty is found with the Dee because of the pollutions which emanate from Wales. In the neighbouring counties of Flint and Denbigh river pollution is regarded with indifference, and the Dee was not long ago associated with an outbreak of typhoid fever. Dr. Young advocates the formation of a joint committee armed with powers similar to those possessed by the Mersey and Irwell Committee. The only industrial waste which gives trouble is ammonium sulphate spent-liquor from collieries. The Cheshire College of Agriculture have done much to encourage clean milk. Dr. Young thinks, however, that the time is ripe for a whole-time veterinary service, and that the recent Milk and Dairies Order will make this step almost obligatory.

Norfolk.

Dr. J. T. C. Nash points out that school medical inspection work is still in a watertight compartment and has not been coördinated with the other public health work. He also advocates the appointment of a deputy medical officer of health and school medical officer. There are practically no factories in the county area, and in the rich fruit-growing land on the west the inhabitants are comparatively well above the poverty line, but the benefit of this is somewhat discounted by mothers leaving their children to go out as land-workers. Women's institutes, largely due to the exertions of Lady Suffield, are a great feature in the village life. Cinemas and wireless have also deeply invaded districts which at the beginning of the century were either "deadly dull" or "unspoilt," according to the particular viewpoint. An outbreak of catarrhal jaundice, affecting many persons, both adults and children, but without a death, appeared to be associated with influenza. Influenza itself was responsible for 181 deaths during the year. As regards isolation hospitals, Dr. Nash has for many years held that in these days of motor transport one central hospital for the whole county would be much the best solution. The county health committee supports this view and had secured a suitable site, but the districts could not agree among themselves. The housing work of the last five years has not met the needs of the agricultural labourers—the class most in need of cottages. A move has been made in the direction of an orthopædic scheme by the appointment of a joint committee.

Leicestershire.

Dr. T. Robinson points out that the present arrangements for treating surgical tuberculosis

are of a temporary nature and insufficient. A joint scheme under the county council and the Leicester City Council is now under consideration. The county council make a grant of £50 to the Leicester and Leicestershire Maternity Hospital, and in return for this sent in six cases during 1925. There are now 37 maternity and child welfare centres operating in the county. During 1925 an exhibition with lectures and demonstrations was held at seven centres. Lectures were given to practising midwives at five centres by Dr. E. L. Lilley, obstetric surgeon to the maternity hospital. The subjects dealt with were chart-keeping, danger signals in pregnancy, and antenatal work.

The county bacteriological laboratory, which was opened in 1919, did more work than ever before in 1925. An extension has been made for the purpose of dealing with bacteriological examinations of milk. The districts are encouraged to send samples, and during 1925 8 of the 12 urban districts and 5 of the 13 rural districts fell in with the scheme; 589 samples were sent in. Of these 320 were classified as good and 143 as bad, 112 being fair and 14 moderate. Of the 320 good samples, 265 came within Grade A standard. During 1926 six more rural districts are taking part in the scheme, which is said to be producing an improvement as regards the production of clean milk. There are 2290 milk producers in the county and 35,000 cows. The Ministry have issued licences for Certified Milk to four producers and for Grade A (tuberculin-tested) to one. The county council have issued Grade A licences to eight producers, one of whom, however, gave up his licence in September owing to adverse reports on his samples. One Grade A producer was unable to comply with the *B. coli* standard, and it was found that his water-supply was unsatisfactory. A fresh water-supply enabled him to comply with the standard.

Cambridgeshire.

Dr. Frank Robinson reports that the county council pay maintenance charges for tuberculous patients at Papworth Colony, and depend upon Addenbrooke's Hospital for the treatment of surgical tuberculosis, for V.D. work, and for maternity beds. A scheme for the provision of a maternity home for the use of the town and county within the curtilage of the last-named hospital was also under consideration during the year. In January, 1906, there were 24 trained and 42 untrained midwives in the county; in January, 1926, there were 50 trained midwives and two untrained. The county council grant nursing scholarships and also subsidise associations employing nurse-midwives. Of the 129 rural parishes there are still 27 with a total population of 9198, for which a midwifery service has not been provided. The provision of light treatment was considered during the year, and it was decided to send lupus cases to the London Hospital for treatment and bone and joint tuberculosis cases to Alton, but it is hoped to have a local out-patient light centre. The county council have taken no action in the matter of tuberculous milk, nor have they received any application from the district councils with regard to this matter. Housing accommodation in the county is still inadequate and closing orders for unfit houses are seldom made.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED DEC. 11TH, 1926.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 328 (last week 316); scarlet fever, 1716; diphtheria, 1185; enteric fever, 49; pneumonia, 1309; puerperal fever, 47; puerperal pyrexia, 124; cerebro-spinal fever 8; acute poliomyelitis, 37; acute polio-encephalitis, 6; encephalitis lethargica, 42; continued fever, 1; dysentery, 4; ophthalmia neonatorum, 124. There was no case of cholera, plague, or typhus fever notified during the week.

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox, 2 (0) from enteric fever, 15 (1) from measles, 8 (3) from scarlet fever, 37 (10) from whooping-cough, 47 (9) from diphtheria, 72 (15) from diarrhœa and enteritis under 2 years, and 52 (18) from influenza. The figures in parentheses are those for London itself.

SCHOOL MEDICAL SERVICE.

Name of district.	No. on roll.	Av. elem. school attendance.	No. of routine children examined.	No. of special examinations and re-inspections.	Percentage of children found on routine examination requiring treatment.*
Cumberland C.C. ..	—†	—†	8,269	15,747	18·0
Wigan ..	13,621	11,836	3,810	7,305	20·0

* Excluding uncleanliness and dental defects. † Not given.

Cumberland.

Dr. F. H. Morrison, in his report for 1925, describes the method of coördinating the health services throughout the county, by which in no case is the full time of any doctor or nurse given to school work alone. The county is divided into six areas, with one medical officer in charge of the whole of the work (except venereal diseases) in each area. This system has obvious advantages, although no one man can be an expert in all branches, with the result that certain conditions may attract less attention than they deserve; it may be for this reason that in Cumberland comparatively few exceptional children have been discovered—e.g., only four blind and seven mental defectives in the whole county. The facilities for dealing with such children are few, but the difficulty in making adequate arrangements in rural areas is very real. This difficulty exists, also, in providing clinics, and the proposed travelling motor-van clinic will be a useful expedient. The dental caravan has been highly successful, as has also the work of the travelling orthopædic nurse. Surgical clogs have been used in the correction of deformities of the feet and legs, and present many advantages in mining districts, where clogs are worn daily by the children. Dr. Kenneth Fraser has carried out a special inquiry into the association of deficiency of iodine with many common conditions met with in school-children. He gives a full account of iodine deficiency and of the prevention and cure of its effects, stating his belief that goitre is only one of these effects. Finally there is a record of 100 children suffering from different diseases such as septic infection, bronchitis, and general debility, whom he treated with iodine with definite improvement in almost every case.

Wigan.

Dr. Henry Whitehead presents his report in a concise and interesting manner. There is direct coördination in Wigan between the child welfare scheme and the school medical service, so that the school medical inspector has the previous history of the child when it first attends school. Dr. Whitehead gives a depressing account of the sanitary conditions of the schools, the majority of which were built prior to 1880, and many were not originally intended as school premises. Heating, lighting, and ventilation are generally bad, while some of the sanitary conveniences constitute definite nuisances. He sums up: "The conditions which exist must have some deleterious effect on the general health of the children." An outline is given of the system employed in the control of infectious diseases, and much extra work has been laid on the staff since every case of chicken-pox (made compulsorily notifiable in 1925 owing to the prevalence of small-pox) is at once visited by a medical officer. Measles was also notifiable during the epidemic at the beginning of 1925, and extra nurses had to be employed to keep pace with the home visiting. Dr. Whitehead has an uphill fight in combating the verminous condition of the Wigan children; "it is deplorable," he writes, "to find a great number of children with verminous heads, again about 17 per cent. of the total inspected." There are at present no open-air schools in the town, nor school baths, nor any provision for the blind or deaf, nor for physically or mentally defective children. It would appear that the Education Committee of

this county borough is scarcely shouldering its statutory duties for the welfare of children.

MENTAL HOSPITAL REPORTS.

The *Derby Borough Mental Hospital* had 484 patients in residence on Dec. 31st, 1925, 70 more than at the beginning of the year, so that the number of vacancies was reduced to 12. The recovery rate was 22·3 per cent. and the death-rate 5·96 per cent., verified by autopsy in 86 per cent. of cases. The general health was good, apart from an epidemic of influenza in the spring and six patients under treatment for tuberculosis. The unused isolation hospital has been refitted for the reception of 16 convalescents or parole patients. Wireless has been installed in all the wards. Only three patients have as yet been allowed out on trial. A dentist visits twice monthly. Six nurses and one attendant obtained their M.P.A. certificate during the year, bringing the total up to 33 per cent. and 59 per cent. respectively.

The *Inverness District Asylum* housed 717 patients at the end of May, 1926, an increase of 27 during the year. The recovery rate was 62·3 per cent., and 15 patients were sent out on trial. Two of them had to return. The death-rate was 8·2 per cent.; 25 deaths were due to senile decay, which, with phthisis, accounted for over half. The farm, gardens, and constructive work, including a new reservoir, provide occupation for a large number of male patients. Eleven beasts were shown at the Farmers' Society Show in August, 1926, and gained 11 prizes and recommendations. A hall of suitable size is being built. For the second year in succession all the entrants for the final M.P.A. examination were successful. Fourteen obtained their certificate.

Institutions for Mental Defectives.

The *Royal Albert Institution for the Feebleminded, Lancaster*, had 805 names on its books on March 31st, 1926, and its financial position remains satisfactory. There were 17 deaths during the year, four from phthisis, 2 from influenza, and one from diphtheria, the source of which could not be found. Among new occupations introduced are art sealing-wax, leather and pewter work, paper-hat and lampshade construction, elementary woodwork, and leather stitching. Twelve school garden plots have been prepared for the inmates to work in. More facilities have been provided for clock golf, and this has been found very steadying for patients with such affections as athetosis and spasmodic tic. It has been decided that recent cases of encephalitis lethargica shall not be admitted, as the superintendent feels that there might be an infectivity risk. The report is illustrated by photographs of the patients at work and play.

The *Derby Borough* Committee for the care of the mentally defective reports continued difficulty in finding accommodation for the urgent cases reported to them. They have 28 patients in the Mental Hospital, costing about £1300 a year. Could these have been placed under the Mental Deficiency Act the cost would have been halved. There were 40 defectives under certificate in institutions on Dec. 31st.

The *Lancashire and Cheshire* Society for the Permanent Care of the Feebleminded maintains a colony with 90 women, 45 girls, 127 men, and 55 boys. Their health during the year has been good; there were two deaths and no infectious disease. The farm and gardens successfully provide occupation for numbers of patients, even including imbeciles. There was a marked improvement in the liveliness and happiness of the school-children last year. The staff have formed themselves into a committee to teach the boys cricket and football, a great improvement on the haphazard games that were previously the rule. Twenty-three acres of land have been added to the society's estate, and it is proposed to alter the farmhouse so as to provide 50 additional places for boys. Every vacancy is filled as it arises, and many applications have to be refused. The report is illustrated with photographs of the buildings and land, and an urgent appeal is made for contributions.

Correspondence.

"Audi alteram partem."

ULTRA-VIOLET RADIATION.

To the Editor of THE LANCET.

SIR,—The excellent results recorded by Dr. Punch and Dr. Wilkinson in your issue of Dec. 11th call for greater detail of the technique they adopted. For general exposures they appear to have used on the same patient both the air-cooled mercury-vapour and the carbon arc. One notes, for instance, that in Case 1, after the first nine exposures with the mercury-vapour lamp, succeeding exposures alternated between the mercury vapour and the carbon arc. What were the indications for changing the apparatus? If the more continuous spectrum of a carbon arc was indicated for one occasion, why was it contra-indicated at the next? It does not appear to have been merely a matter of convenience, for a definite system of changing the lamps was adopted. Do the authors claim any particular advantage for this method? Again, for local treatment to the scar in this case the tungsten arc was used. Was there any particular indication for changing from the mercury-vapour lamps, either of which could have been used for treating the scar? What was the relation of a carbon arc dose to the mercury vapour dose in erythema-producing terms?

Case 3 shows up the dangers of ultra-violet therapy. Conclusions are based on a single case and that not of a very progressive type, nor one in which the anæmia was very striking. There are so many practitioners using ultra-violet radiation that some may also be tempted to rely on ultra-violet rays for the treatment of Hodgkin's disease, to the exclusion of methods such as X rays, which are far more likely to be of benefit. It is not suggested that ultra-violet radiation may not be of benefit for the secondary anæmia, but surely there is no justification as yet for making it the only or even the most important method of treating Hodgkin's disease.

My own experience of ultra-violet radiation in Hodgkin's disease is limited to two cases. One case, owing to the erroneous diagnosis of tuberculous glands (tubercle bacilli had been found in his sputa at a sanatorium) was treated for four months with both local and general ultra-violet radiation. He did not improve, the main mass of glands becoming somewhat larger. A gland was then excised, which showed the case to be one of Hodgkin's disease. The second case was put on ultra-violet treatment, pending X ray treatment. After a month's treatment the patient stated he felt better, but beyond a slight decrease in the size of the spleen there was no clinical evidence of improvement. The patient discharged himself from the hospital then, only to return several months later in a hopeless condition. I feel, therefore, that the value of ultra-violet radiation in Hodgkin's disease still remains to be proved.

I am, Sir, yours faithfully,

London, W., Dec. 16th, 1926. M. WEINBREN.

THE DISSOLUTION OF INSULIN.

To the Editor of THE LANCET.

SIR,—The hyperglycæmic action of insulin is described on pages 122 and 123 of the first volume of "The Nature of Disease," published in 1924. It would appear from further experimentation that the action of insulin is influenced by the state in which the protein particles in the plasma happen to be when the injection is made. The previous administration of certain conductors, such as sup 468, tartrazine, &c., and of certain condensers, such as oxygen, the carbon disulphide product of dimethylamine, &c., prevents insulin from causing hypoglycæmia. The subsequent administration of certain conductors, such as sup 36, and of certain condensers, such as glucose, dihydroxyacetone, &c., prevents fits occur-

ing following a hypoglycæmic dose of insulin and cheeks the fits if they are already in being. The action of these drugs is to increase the number and to diminish the size of the protein particles in the plasma, the effect of which is to raise the percentage of the blood-sugar. The percentage of the blood-sugar is raised because the carbohydrate fraction of the protein particles is less firmly adsorbed. Insulin lowers the percentage of the blood-sugar because it fixes the carbohydrate fraction more firmly to the protein particles. Fits are caused because the protein particles become too big to circulate.

When protein particles increase in size they leave the peripheral circulation to become precipitated in the cerebral capillaries, and it is this precipitation which causes fits, convulsions, coma, and death. The moment the enlarged particles are broken up, or dispersed, and restored to the circulation, the fits cease. The drugs most capable of acting in this way are those with a small nucleus and having one or more of their active groups negatively charged. The reason why fructose, galactose, &c., are of no value in preventing and overcoming insulin intoxication is because the active group in the No. 1 position is not negatively charged. Therefore, glucose does not act by restoring to the blood the sugar insulin has driven away, because insulin does not deplete the blood of sugar; it only makes it become more part and parcel of the protein particles in which state it is not to be detected as sugar.

The complete action of insulin is discussed at full length in both volumes of "The Nature of Disease."

I am, Sir, yours faithfully,

J. E. R. MCDONAGH.

Wimpole-street, W., Dec. 17th, 1926.

GANGRENE OF THE TOE.

To the Editor of THE LANCET.

SIR,—Prof. Gask and Sir John O'Conor have given, in your issue of Dec. 11th, interesting views on the pathology and treatment of this very serious condition. I have under my care at the present moment a case which quite upholds Sir John O'Conor's method of treatment. Twelve months ago I was sent for to see a woman aged 70. She had gangrene of the big toe. The nail and the toe itself were gangrenous up to a line extending round the toe at the level of the root of the nail. No arterial pulsation could be felt at the ankle. The heart was intermittent; the urine crowded with streptococci contained neither sugar nor albumin. Lymphangitis was creeping up the leg to the knee. The patient refused treatment at hospital, where I explained to her she could have her choice between sympathicectomy and diathermy. Prof. Gask's views seem to coincide with those of MM. Lian and Barrieu in the current number of the *Année Médicale Pratique*: "La sympathicectomie, outre qu'elle n'est pas une opération dépourvue de danger, est loin d'avoir enregistré à son actif des succès tels qu'on doive la considérer comme une indication formelle."

The treatment pursued at the patient's home was as follows. The gangrenous foot was placed as often and as long as possible in warm water containing 5 per cent. bicarbonate of soda, the heat of the water being gradually raised to a point just bearable. At night the toe was smeared with warm glycerine and belladonna, and enveloped in cotton-wool. In a month the dead tissue began to lift off the living and what remains of the toe is firmly healed. The patient, who was bedridden, is now able to help in the house work.

Text-books and articles dealing with the condition are unanimous in the opinion that neither sympathicectomy nor diathermy has any appreciable effect on the larger arteries of the limb. The good they do is dependent solely on improvement of the collateral circulation. The treatment which Sir John O'Conor recommends and which I gave my patient had an extremely satisfactory result.

I am, Sir, yours faithfully,

Exeter, Dec. 14th, 1926. J. PEREIRA GRAY.

Obituary.

HUGH CAMPBELL ROSS, M.R.C.S., L.R.C.P. LOND.

Dr. H. C. Ross died at sea on Dec. 14th from hypostatic pneumonia at the early age of 51. He was one of three distinguished medical brothers, sons of General Sir Campbell Ross, K.C.B., the others being Sir Ronald Ross, F.R.S., and Dr. E. Halford Ross, to whom we extend our sympathy. Educated at the Isle of Wight College and St. Thomas's Hospital, Hugh C. Ross took his medical qualification in 1898 and held posts as house surgeon and house physician at the West London Hospital. During the South African war he served as a civil surgeon in the South African Field Force and after peace was declared joined the Royal Naval Medical Service for four years. From 1906 to 1908 he was a medical officer in the public health department of Egypt, where he inaugurated an antimosquito campaign. On his return to this country he went to Liverpool, where, as director of cancer research attached to the Royal Southern Hospital, he studied problems of cell-division in relation to cancer and published, jointly with Dr. J. W. Cropper, a book entitled "Induced Cell-reproduction and Cancer" which caused some controversy. In 1910 Dr. Ross moved to London as director of a research organisation financed by Mr. J. H. McFadden, of Philadelphia, the laboratories of which were housed in the building of the Lister Institute. For six years Mr. McFadden continued to support this organisation, which was originally founded for research in cancer, but later extended to work on other problems. During this period investigations were made under the direction of Dr. Ross into the cause of cancer in certain occupations, and his own interests broadened to include industrial diseases of all kinds, especially silicosis. During the war Dr. Ross worked in the clinical laboratory of the Ministry of National Service. He was a man of catholic interests and a wide experience; his views were often unorthodox but always stimulating, and his early death will be regretted by many friends and colleagues.

HENRY ROSS TODD, F.R.C.S. IREL.

THE sudden death of Dr. H. R. Todd on Dec. 16th removes a man who brought a gifted personality to the practice of medicine. He was the son of Robert Ross Todd, of Dublin, Clerk of the Crown and Peace for County Down, and was born in 1862. Qualifying in 1883, he worked for a time as resident medical officer and registrar at the Cork-street Fever Hospital, and then settled at Warlingham, where his practice was large and successful. In 1900 he became a Fellow of the Royal College of Surgeons in Ireland, and in the following year left Warlingham to take up work in the West-end of London. The number of his patients began to grow rapidly, but after only a year in London, for reasons connected with the health of his family, Dr. Todd decided to retire. He was still a comparatively young man, and he bought a very small practice at Bembridge, in the Isle of Wight, anticipating that a couple of hours' work each morning would be all that was necessary, and that this time would be devoted to the poor. His reputation, however, increased so rapidly that he soon found he had more work than he wished for. He therefore determined to give up work altogether, and went to live at Ipsden, in the Chilterns. But many old patients went on consulting him about their difficulties; he gradually became more interested in the mental side of disease, and finally he came back to London, where he treated patients for phobias, bad habits, and nervous instability. "Although Dr. Todd had no profound knowledge of the later scientific developments in medicine," writes a colleague, "he had a keen and accurate diagnostic sense. With this he possessed an almost uncanny power of knowing what his patient was thinking and feeling, an immense power of

sympathy, a level-headed appreciation of the relative value of things, a happy optimism, and great tact." As a result he had the power of inspiring immediate confidence, and where other people could be helped he spared neither time nor trouble.

Dr. Todd had been suffering from myocardial disease for some time, and died when travelling in the train from London to his home at Aston Clinton. He leaves a widow, a married daughter, and two grandchildren.

LAURA WILLIAMS PUGH, M.B. EDIN., D.P.H.

Dr. Laura Pugh, medical officer of the Welsh Board of Health (Ministry of Health), died at her home at Machynlleth on Dec. 17th. She was the sister of the late Dr. Robert Pugh, medical superintendent of the Joint Counties Asylum, Talgarth, and received her medical education at Birmingham and Edinburgh, graduating in 1908. Later she obtained the D.P.H. of the English Conjoint Board. After some years' service as assistant medical officer at the West Ham Union Infirmary she returned to Wales in 1914 to enter the service of the Monmouthshire County Council as assistant school medical officer and medical officer in charge of the maternity and child welfare centres of the county. She became an approved lecturer under the Central Midwives Board, and in that capacity delivered courses of lectures to midwives at the Tredegar Maternity Home. Three years ago she was appointed by the Minister of Health to be the woman medical officer of the Welsh Board of Health, her duties including the inspection of maternity and child welfare schemes and maternity hospitals throughout Wales.

Dr. Pugh was a very capable officer and soon became popular with officials of local authorities with whom she came in contact. She was a woman of strong character, and during her short period of office succeeded in effecting great improvements in maternity and child welfare work in Wales. In February of this year she entered a nursing home in London to undergo an operation, but she was found to be suffering from malignant disease for which no relief could be given. After a short period of rest she returned to her duties and with characteristic courage carried on her work until last month.

"Dr. Pugh was devoted to her work," writes a colleague. "Though she well knew that the end was inevitable and could not be long delayed, she resolutely remained at her post until further work was physically impossible. She never thought of herself but was always anxious to be of service to others. She was one of the most delightful and loyal of colleagues and will be greatly missed by those with whom she worked at the Welsh Board of Health and by the medical officials of local authorities in Wales."

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—The Prince of Wales's General Hospital will hold an intensive course in general medicine, surgery, and the specialties from Jan. 10th to 22nd, the daily sessions will be from 10.30 A.M. to 5.30 P.M., and the formal lectures at 4.30 P.M. will be open to members of the Fellowship of Medicine. Beginning on Jan. 10th there will be a two weeks' course in Diseases of Children at the Royal Free Hospital and at the Children's Clinic. At the Bethlem Royal Hospital, from Jan. 11th to Feb. 5th, a series of lecture-demonstrations on psychological medicine will be undertaken by Dr. Porter Phillips and the members of his staff on Tuesdays and Saturdays at 11 A.M. The National Hospital for Diseases of the Heart will hold a course in cardiology from Jan. 17th to 29th. Early application is desirable as the entry is limited to 20. Courses in obstetrics are arranged at the Queen Charlotte's Hospital and the City of London Maternity Hospital; personal application must be made to the Fellowship, which can also make arrangements for the appointment of clinical assistants at the Samaritan Hospital for Women. The series of lectures, arranged by the Fellowship, on Emergencies in Medicine and Surgery, will recommence on Jan. 27th. Clinical demonstrations in surgery and ophthalmology have also been arranged to start in January. Syllabuses of the special courses and copies of the programme of the general course and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship at 1, Wimpole-street, London, W. 1.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The End of the Session.

PARLIAMENT was prorogued on Wednesday, Dec. 15th, until Feb. 8th, 1927. The King's Speech, which was read by the Lord Chancellor in the House of Lords, commented on the fact that the improvement in housing accommodation continued. A larger number of new houses had been completed than in any previous year. Among the Acts to which the Royal Assent was given by Commission were: The Lead Paint (Protection against Poisoning) Act; the Workmen's Compensation Act, 1926; the Public Health (Smoke Abatement) Act; the University of London Act; the Births and Deaths Registration Act; the Housing (Rural Workers) Act; and the Coroners (Amendment) Act.

HOUSE OF COMMONS.

TUESDAY, DEC. 14TH.

Government and the Necessitous Areas.

ON the motion for the adjournment of the House,

Mr. W. GRAHAM called attention to the enormous growth of the liabilities of the local authorities due to industrial distress within recent years. He said that he did not suggest that any Government had been free from difficulty in this matter, and it would be idle to deny that a considerable sum of public money was involved. But in view of the fact that they were at the end of four or five years of industrial depression, and that events had been aggravated very much by the circumstances of 1926, it was possible to show that the case for the local authorities had become urgent and indeed overwhelming. Recent figures had shown that the amount of out-relief in England and Wales, which was £2,000,000 to £3,000,000 annually under normal pre-war conditions, had risen as high as £15,000,000 or £16,000,000. He suggested that even if they took the most optimistic view of industrial recovery in this country in the near future, several of these local authorities were going to find it almost impossible, if not indeed impossible, to meet the liabilities which surrounded them. The great bulk of the members of the Labour Party had come to the conclusion that it was only on the basis of some definite State contribution, or the shouldering by the State of some part of the responsibility, that this situation could be met. They all recognised that these very heavy burdens on the localities imposed a load upon industrial recovery which was far less defensible than the load which was imposed by Imperial taxation. If that was the case, they had a very strong argument from the standpoint of industrial recovery for a transference of at least a portion of the burden. Of the evidence tendered to the Meston Committee, 85 per cent. was in favour of a retention of the system of percentage grants. Those grants were broadly and generally 50 per cent. of approved expenditure for purposes of health and education; 75 per cent. for venereal disease treatment; 100 per cent. for certain port sanitary services dealing with the danger of infection, and various percentages in respect of certain other classes and grants. That system had been in force for a number of years in this country, and it was designed to minister to what were believed to be inevitably expanding needs in the community, and to supply on the one side a certain centralised regulation of the work of the local authorities, and on the other side to encourage the local authorities, and on some occasions to press them to undertake those services by the promise that 50 per cent., or some other percentage of the approved expenditure, would be met. Evidence was also tendered to the Meston Committee in favour of block or fixed grants, but that evidence was a very small part of the case submitted to the Committee, and the extraordinary thing was that the draft report—he was obliged to make this public—was inconsistent with the great bulk of the evidence rendered to the Committee.

Sir KINGSLEY WOOD: There never was a report.

Mr. GRAHAM said that he was referring to the draft report of the Chairman. The Government were proceeding with a system of block grants, and apparently proposed to weigh the contribution to the local authorities in terms of extra population, and with reference to assessable value below the country's average. So they were entitled to place these two facts together—namely, the refusal of any specific provision for the necessitous areas, with all their existing needs, and the prospect of some fixed or overhead grant for the future which would amount to nothing more in practice than a rearrangement of the liability or burden year by year within the local authorities themselves; in other words, the State had not stepped in in any capacity to help the local burdens arising from the industrial conditions of the past four or five years. Moreover, it must be

added that the tendency of a great deal of the Government's legislation within recent times had undoubtedly been to increase the burdens upon local authorities. He begged the House not only to give their support for some immediate relief for the necessitous areas, but further to safeguard the future position, for by refusal to assent to a scheme of block grants which was premature could only add to the burdens of the localities, and further penalise the industrial recovery, which he trusted it was their common purpose to promote.

After some discussion,

Mr. NEVILLE CHAMBERLAIN (Minister of Health) said that Mr. Graham devoted part of his speech to the discussion of a report which had never been made by the Meston Committee, and in another part he criticised proposals which the Government had not yet formulated. There seemed to be a good deal about the debate which was shadowy and unreal. There were a good many circumstances which should be taken into account before the Government decided whether anything was necessary to be done in the way of further assistance, and if anything was necessary, what should be done, and in what proportions. He had examined just casually the position in some unions where the distress had been greatest, and he found that on the whole they were not so bad as one might naturally have expected. For instance, he found that in a number of unions the total indebtedness could be wiped off by an extra rate of 2*d.* in the £. In others it amounted to more—up to 2*s.* There were four which were over 10*s.*, one over 15*s.*, and one which was over 32*s.* In Bedwellty an extra rate of 32*s.* 10*d.* would be necessary to wipe off the indebtedness. The position of Bedwellty was being inquired into by one of his inspectors. He would not pass any judgment on it until he got the inspector's report, but he was bound to say that considerable irregularities had been taking place there. There were other differences between one union and another. By some unions relief had been given on loan. In those cases the burdens on the ratepayers would be very materially decreased as the loans were paid off. The time had not come when it was possible to consider what course it might be necessary to take arising out of the special circumstances of the coal stoppage. Guardians were for the present being financed by Goschen loans. They had not fixed a time for repayment, and the position would be reviewed next February. Then they would be able to see what relief it would be still necessary to give in relation to the coal areas. With regard to the permanent difficulty about necessitous areas, that, he believed, was capable of solution not by special grants founded upon temporary circumstances, but by perhaps a better allocation of the burdens as between unemployment insurance on the one side and the Poor-law authorities on the other.

WEDNESDAY, DEC. 15TH.

Fatal Accidents in the Royal Air Force.

Mr. DAY asked the Secretary of State for Air the number of officers and men of the Royal Air Force killed in flying accidents during each of the three years preceding the last convenient date, together with the number of fatal accidents in the French air force during the same period.—Sir S. HOARE replied: The figures as regards the Royal Air Force during the 12 months ending Dec. 9th in each of the years named were as follows: 1926—46 officers, 2 cadets, 28 airmen; 1925—40 officers and 11 airmen; 1924—48 officers, 1 cadet, and 23 airmen. In addition, the following naval, military, or civilian personnel were involved in fatal accidents to Royal Air Force machines: in 1926, 7; 1925, 4; 1924, 2. As regards the French air force, according to my information, statistics of the number of fatal accidents are not made public by the French authorities. I may say, however, that in the course of a debate in the Chamber at the end of November it was stated that there had been 13 fatal accidents in the French military air service on a single type of machine in the space of two months. Whilst this, no doubt, represents an exceptional period such as all air services must experience from time to time, it is apparent from this fact and other confidential information in my possession that figures which have recently been cited in this House purporting to suggest that the accident-rate in France has, during the past two or three years, been more favourable than in this country, are totally inaccurate.

Captain GARRO-JONES asked the Secretary of State for Air if he could conveniently state the proportion of firing accidents incurred by officer pilots and by airmen pilots, respectively, relative to their numbers and hours flown.—Sir S. HOARE replied: Airmen pilots have not been in existence sufficiently long or in sufficiently large numbers to afford a comparison of any value. Broadly speaking, the death-rate amongst airmen pilots has been higher than amongst officer pilots, but it must be remembered that the number of the former is about a tenth the number of the latter, and that one accident makes a considerable difference in the average in so far as the airmen pilots are concerned.

Medical Men and Old Age Pension Vouchers.

Mr. WALTER BAKER asked the Minister of Health whether he was aware of the new regulation whereby an invalid old age pensioner was required to have his or her signature in the book of vouchers witnessed by a minister of religion or a doctor, in addition to possessing the official document certifying inability to apply for payment in person; whether he was aware that old persons who were not on the visiting list of ministers of religion were compelled to pay a doctor's fee in order to obtain the necessary signature; and whether, seeing that the new regulation had been introduced as an official economy, he would increase the number of classes from which a competent witness might be drawn.—Mr. R. MCNEILL (Financial Secretary to the Treasury) replied: Arrangements are under consideration which will remove the inconvenience to which the hon. Member refers.

Lotteries for Hospitals.

Sir CLEMENT KINLOCH-COOKE asked the Secretary of State for the Home Department whether, in view of the increasing difficulty of maintaining hospitals and other charitable institutions, he would consider so amending the Lottery Acts as to make it possible for this method of obtaining funds to be utilised, subject to official sanction, for the collection of money to be used exclusively for such undertakings without the management incurring the risk of a prosecution for acting contrary to law.—Captain HACKING replied: I am afraid my right hon. friend could not undertake to introduce legislation of the kind suggested. Apart from other considerations, he could not propose to cast upon any department or official the duty of giving or withholding sanction.

The Spahlinger Treatment.

Sir CHARLES CAYZER asked the Minister of Health whether local authorities were encouraged to make use of the Spahlinger treatment for tuberculosis; whether this was one of the special benefits on which insurance societies could apply their surpluses; and whether any estimate could be given of the sum of money needed to introduce the system of treatment on an extended scale in this country.—Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied: So far as my right hon. friend is aware, the position in regard to this treatment has not changed since I answered a question on this subject on April 27th, and the materials necessary for a scientific investigation of the treatment in this country have not been forthcoming.

Sickness among Civil Servants.

Mr. PRESTON asked the Secretary of the Treasury the total number of sick-leave absences and their average duration among male and female established civil servants outside the Post Office during each of the last five convenient years.—Mr. R. MCNEILL replied: No complete particulars are available as regards the total number of sick-leave absences and their average duration amongst male and female established civil servants in all departments of State, other than the Post Office, during each of the last five years. The following statement, which has been compiled from the records for the last four years of nine principal departments other than the Post Office, may, however, be of interest to my right hon. friend:—

Average Amount of Sick Leave Absence in Days of Established Civil Servants Employed in Nine Principal Departments of State (Exclusive in some cases of Ex-headquarters Staff).

	Men.		Women.
	Disabled.	Others.	
1922	9·6 ..	7·4 ..	12·8
1923	9·9 ..	7·1 ..	13·9
1924	10·6 ..	7·7 ..	14·1
1925	10·5 ..	7·7 ..	14·2

For 1925 the figures are inclusive of Sundays occurring within a period of sick leave; in the earlier years the figures for some departments were for working days only.

Use of Brynite as Meat Preservative.

Lord APSLEY asked the Minister of Health whether brynite was a permitted preservative under the new preservatives order; whether his department had received any complaints of the effect of this preservative on human beings; whether he was aware that animals had succumbed after eating meat so treated; and whether he was satisfied that under no circumstances could brynite be regarded as dangerous to public health when used in connexion with meat.—Mr. NEVILLE CHAMBERLAIN replied: The article mentioned is a proprietary preservative, and according to the information as to its composition which has been given to my department by the proprietors, its use will be permissible in sausages and sausage meat, which are the only meat preparation in which any kind of preservatives will be allowed when the new Regulations become operative. The Departmental Committee on Preservatives in Food reported that the use of preservatives generally is undesirable

and should be restricted as far as possible, but I have not received any special complaints of the effect of this particular article on human beings or on animals.

Regional Dental Officers.

Lieut.-Colonel Sir FREDERICK HALL asked the Minister of Health whether it was proposed to appoint regional dental officers in connexion with dental benefit treatment as administered by approved societies; whether it was intended that these appointments should be held only by registered dentists possessing a diploma recognised and registrable in this country; and, if not, whether he would give an assurance that practitioners holding these registered diplomas would not come under the supervision of any regional dental officer not possessing these diplomas.—Sir KINGSLEY WOOD replied: The answer to the first part of the question is in the affirmative. Applications for the posts have been invited by advertisement, which does not restrict applications to dentists holding any particular diploma. A Selection Committee has been set up, and while no appointments have yet been made, my hon. and gallant friend may rest assured that every attention will be given to the considerations mentioned in the last part of his question.

Medical News.

UNIVERSITY OF OXFORD.—At a Congregation held on Dec. 17th the degree of Doctor of Medicine was conferred on David Thomas Barnes.

UNIVERSITY OF CAMBRIDGE.—At Congregations held on Dec. 10th and 18th, the following degrees were conferred:—

M.B. and B.Ch.—J. M. Dobie, H. H. Fisher, J. Holmes, E. W. P. Thomas, and W. Richards.
M.B.—C. J. P. Grosvenor, G. W. S. de Jersey, C. G. Taylor, and H. M. Woodman.
B.Ch.—W. S. Hunt.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Primary Examination for the Fellowship, held from Dec. 7th to 18th, 175 candidates presented themselves, of whom 49 were approved and 126 were rejected. The following are the names and medical schools of the successful candidates:—

V. M. Albuquerque, Middlesex; E. F. Barnardo, Cardiff and London; J. C. Barrett, St. Thomas's; C. V. Bloom, London; A. M. Boyd, St. Bart.'s; W. H. Bremner, Otago and Middlesex; E. C. B. Butler, London; W. S. Chapman, St. Mary's; B. Chaudhuri, Bombay and Middlesex; W. W. Craner, London; J. Crooks, Edinburgh; L. Dass, Punjab and Middlesex; H. I. Deitch, Middlesex; A. D. Everett, St. Bart.'s; J. Fitzsimons, Otago and Middlesex; P. H. Fox, Cambridge and St. Bart.'s; A. C. Gairdner, Oxford and London; J. M. Gibson, Oxford and St. Thomas's; Winifred M. Gray, Royal Free; W. P. Greenwood, St. Bart.'s; C. M. Gwillim, St. Bart.'s and St Mary's; K. W. D. Hartley and T. H. Hobbes, St. Bart.'s; F. W. Holdsworth, Cambridge; M. K. Hussein, Cairo and St. Bart.'s; H. P. Hutchinson, Cambridge and St. Bart.'s; B. G. Johnston, Adelaide and London; A. L. Kerr, Liverpool; L. E. Le Souef, Melbourne and Middlesex; O. V. Lloyd-Davies, Middlesex; J. S. Loughridge, Belfast; T. K. S. Lyle, Cambridge and King's Coll.; J. McFadzean, Glasgow and London; G. K. McKee, St. Bart.'s; G. H. Morley, Middlesex; Eileen S. Morris, University Coll.; M. G. Nimatallah, Cairo and London; M. V. P. Peiris, Ceylon and Middlesex; A. S. Philps, St. Bart.'s; R. Purvis, St. Thomas's; R. S. Pyrah, Leeds; L. A. Richardson, Cambridge and St. Thomas's; W. M. Robb, Edinburgh and St. Mary's; G. L. Robinson, Cambridge and London; E. M. Sharples, St. Bart.'s; H. T. Simmons, Manchester; J. F. Simpson, St. Mary's; V. C. Thompson, Cardiff and St. Bart.'s; and J. M. Yoffey, Manchester.

UNIVERSITY OF BIRMINGHAM.—At a Congregation held on Dec. 17th, the following degrees were conferred:—

DOCTOR OF MEDICINE.

Gilbert Henly and Dorothy Jeyes.

BACHELOR OF MEDICINE AND BACHELOR OF SURGERY.

Edna E. Adams, Florence I. Beech, Nagib Gindi, Nagib Iskander, Louise A. Johnson, Chandra Mani, Reginald Nicklin, George R. Orchard, Hubert A. Picton, Hilda H. Reeves, Kamil Rophaeel, Frederick J. Swinton-Esher, and Percy Symons.

UNIVERSITY OF DURHAM: *Faculty of Medicine.*—At examinations held recently, the following candidates were successful:—

THIRD EXAMINATION FOR THE DEGREES OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY.

Pathology and Bacteriology; Materia Medica, Pharmacology and Pharmacy; Public Health; Medical Jurisprudence.—Gerald Kahn, James C. V. Hindhaugh, and James H. Hudson.
Pathology and Bacteriology; Materia Medica, Pharmacology, General Principles of Therapeutics, and Pharmacy; Public Health; Medical Jurisprudence.—Mohammad Abdul Gaffar.

UNIVERSITY OF LIVERPOOL.—At examinations held recently, the following candidates were successful:—

M.D.

A. R. D. Adams, C. Cookson, F. Earlam, and T. Hare.

M.CH. ORTH.

R. W. Jones, B. L. McFarland, and M. M. Riad.

FINAL EXAMINATION FOR M.B. AND CH.B.

Part III.—H. W. Altschul, H. E. Barrow, G. S. Clouston, W. A. Davies, K. Edmundson, R. W. Eldridge, A. B. Follows, E. E. Glenton, Catherine E. I. Greenshields, J. Hallam, Elizabeth M. Harding, W. E. Hargreaves, Mary Hope-Simpson, E. Hulme, J. Katz, M. A. Lombard, S. G. Massey-Lynch, S. A. Walker, and Joan Watkins.
Part II.—A. E. Adams, Gladys A. Coventry, A. W. Green, J. G. Hattingh, R. E. Jackson, Edna Morris, G. W. Phillips, J. L Walker, and J. Williamson.
Part I.—S. Alstead, *E. T. Bates, S. Canter, H. F. Cohen, *T. B. Davie, Ariel R. S. Deacon, T. L. Dowell, R. J. Doyle, Ruth M. Fennell, J. H. Follows, Agnes G. Gillespie, R. G. Gornall, J. J. Graham, G. T. Harris, W. E. J. Jones, *T. Lasker, N. R. Lawrie, J. M. Leggate, H. Leiper, C. T. Mercer, Doris Morrison, Winifred O'Callaghan, J. Pasvolsky, H. Paterson, E. E. Prebble, E. L. Rubin, M. Silverstone, *H. W. Smith, and G. G. Warburton.

* With distinction.

DIPLOMA IN TROPICAL MEDICINE.

T. A. Austin, W. W. Besson, J. McP. Campbell (recommended for Milne Medal), H. A. A. Doherty, J. C. St.G. Earl, Beatrice N. Fletcher, J. Hamilton, J. H. Kennedy, L. D. Khatri, C. F. McConn, K. L. Malhautra, S. L. A. Manuwa, Winifred H. Mitchell, W. S. Ormiston, F. L. Patterson, V. Puri, A. Robertson, J. G. S. Turner, C. Voigt, and S. N. Wasti.

UNIVERSITY OF EDINBURGH.—At a graduation ceremonial held on Dec. 17th, the following degrees were conferred:—

DOCTOR OF MEDICINE.

†Jessie Gordon, Margaret H. Gordon, Richard T. F. Grace, William T. Graham (in absentia), Arnold A. Hamilton †Kombur Ramaswamy Krishnaswamy Iyengar (in absentia), Edward W. Kirk (in absentia), John H. D. Lawrie, John R. Lord, †John S. MacGill, Duncan Macmillan (in absentia), Dorothea J. Mann, Paul S. Meiring, William G. Patterson, *Eric H. Ponder, William A. Simpson, Arthur F. Smith, George Somerville, John P. Steel, and †Isabel G. H. Wilson.

*Awarded gold medal for thesis.
† Commended for thesis.

BACHELOR OF MEDICINE AND BACHELOR OF SURGERY.

Hussein El. Sayyed Abaza, John D. Ackermann, Aziz Ahmed, James B. Annan, Thomas W. Banks, Francis W. Clark, Alexander R. Cowan, Ian R. Duthie, Vedanayagam Dyream, William D. Forsyth, Evan H. Griffiths, Euphemia T. Guild, Janet W. Jackson, Eva G. John, Isabella M. Marshall, Eugene P. L. L. Masson, William H. Moore, Katherine M. Muirhead, Kiriti Bhusan Mukerjee, George Nahapiet, James G. Paul, Maurice R. J. Peters, Frederick W. Pringle, William H. Rees, Janet C. Ronaldson, Roma M. Ross, Gordon A. Ryrie, Jaswant Singh, Marie Steven, Finlay Sutherland, Winifred E. Wall, and Marjorie S. Waterston.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—At a meeting of the College held on Dec. 15th, Dr. A. Logan Turner, President, in the chair, the following candidates, who passed the requisite examinations between Sept. 27th and Oct. 4th, were admitted Fellows:—

David Band, Conrad G. H. Blakemore, William S. Burr, Palathinkal Varkey Cherian, George R. Davidson, James K. Davidson, Robert Dick, Hubert H. Fisher, Ada Furniss, John J. Gearin, Cassidy de Wet Gibb, Ion S. Hall, Allan Hopkins, James S. Hovell, David Hyslop, David S. M. Jones, Clifford D. Kennedy, Francis Kennedy, Harry S. Kenrick, Henry Aung Khin, Issac Theogarajah Kunaratnam, Reginald H. Lucas, Andrew W. McCay, John I. Noble, Robert D. Owen, John R. Paterson, Charles E. Scott, Cedric H. Swanton, Alan A. Tennent, Raphael Thurse, and James W. Dawson.

JOINT TUBERCULOSIS COUNCIL.—At the last meeting of the Council, held at 1, Upper Montague-street, London, W. 1, Sir Henry Gauvain, who presided, and Prof. S. Lyle Cummins gave an account of their visit to America in connexion with the International Tuberculosis Conference held at Washington. Dr. Varrier Jones and Dr. Nathan Raw had also attended this conference. All were cordially received, and spoke in the warmest terms of the hospitality they had experienced. Sir Henry Gauvain delivered over 50 lectures in Canada and the United States. He had been impressed by the genius for organisation manifested throughout America in business concerns as well as in medicine, of which the Mayo Institute provided a magnificent example in surgery. Operative treatment in surgical tuberculosis was preferred to the conservative measures advocated in this country. The Albee School aimed at internal splinting by bone grafts, while Hibbs and his disciples sought the same end by synostosing the parts affected. The joints of diseased spines were removed, and in hip disease bony ankylosis of femur and ilium was secured. Light treatment was largely employed, and at the J. N. Allen Memorial Hospital Dr.

Brian had invented a lamp reproducing all the rays found in natural sunlight, which had been installed at a cost of $17,000. The same hospital provided for the amusement of patients a private zoo stocked by exacting from every wild beast show exhibiting in the town a toll of one animal. Generally speaking, the mercury-vapour lamp was preferred to the carbon arc. Prof. Cummins spoke of Dr. Lawrason Brown's work, and of the value he attached to light treatment in cases of intestinal ulceration; in this everything depended on the reliability of the X ray diagnosis. Sir Henry Gauvain was renominated chairman of the Council for 1927; Dr. G. Lissant Cox, vice-chairman; Dr. E. Ward, secretary; and Dr. J. Watt, treasurer. It was decided to circulate the employment report to medical officers of health, tuberculosis officers and medical superintendents. It was reported that a successful course in surgical tuberculosis had been held at Heatherwood Hospital, attended by five post-graduates. One tuberculosis worker had taken a course in artificial pneumothorax at the East Anglian Sanatorium. It was decided that a Copenhagen course should find place in the programme for 1927. The next meeting of the Council was arranged for Saturday, Jan. 15th, at 10 A.M.

POPLAR HOSPITAL FOR ACCIDENTS.—At the annual festival it was stated that the hospital now treats 1000 patients a week, and that the reconstruction, which will have cost £80,000, will be completed next year.

WARMING OF LONDON HOSPITAL.—The whole of the boilers and heating arrangements have been condemned, and need to be renewed immediately at a cost of £23,000. At present Lord Knutsford says, the hospital does not possess "as many pence."

WESTON-SUPER-MARE HOSPITAL.—This institution is being enlarged, reconstructed, and modernised at a cost of £50,000 as a memorial of Queen Alexandra. There will be four main wards, each containing 14 beds, and a maternity block, while a number of private beds are being provided.

METROPOLITAN HOSPITAL SUNDAY FUND.—The year's collections amounted to £87,049, a drop of £7792 on last year. Places of worship raised £37,920, which, like donations, was a substantial fall. The working expenses were 4·17 per cent. of the gross receipts, and £80,000 has been distributed.

REGIONAL DENTAL OFFICERS UNDER INSURANCE ACTS.—It is reported that the Minister of Health has decided to appoint six whole-time regional dental officers for England and Wales at a salary of £900 a year. The duty of these officers will be to ensure the efficiency of dental treatment given as an additional benefit under the National Insurance Act.

BRITISH CHARITIES ASSOCIATION.—Presiding at the third annual meeting of the Association, Lord Knutsford reported that the grants made during the year amounted to £76,700—an increase of £46,000 over the previous year. Hospitals beyond the London area received £45,000, King Edward's Hospital Fund for London received £20,000 and the League of Mercy £5000. Distributions for the current year, including a further £15,000 to King Edward's Fund, brought the total distributions up to £148,000. This worked out at the equivalent of a continuous distribution of over £800 per week throughout the three and a half years covering the Association's activities.

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Appointments.

BROWN, H. G., M.D., C.M. Edin., has been appointed Medical Officer for the Ronnoch Landward area.

DAWSON, W. S., M.D., B.Ch. Oxf., D.P.M., Professor of Psychiatry at Sydney University, Australia.

FITZGIBBON, GIBBON, M.D. Dubl., F.R.C.P.I., Gynæcologist to Mercer's Hospital.

MCCONNELL, A., F.R.C.S.I., appointed to the Chair of Surgery to the School of the Royal College of Surgeons, Ireland.

PAUL, H., M.D., B.Ch. Belf., Medical Officer of Health for Smethwick.

STANNUS, HUGH S., M.D. Lond., M.R.C.P. Lond., D.T.M. & H. Examiner in Tropical Medicine, University of Liverpool.

Certifying Surgeons under the Factory and Workshop Acts, HAMILTON, G., M.B., B.S. Lond. (Chichester): AIRD, A. W., Jun., M.B., Ch.B. Glasg. (Newmilns District of the County of Ayr).

Vacancies.

For further information refer to the advertisement columns.

Bedford County Hospital.—Asst. H.S. At rate of £130.
Calcutta Corporation.—Health Officer. Rs.1500 per mensem.
Charing Cross Hospital, W.C.—Med. Reg. £150.
Dagenham Urban District Council.—M.O.H. and Asst. County M.O. £550 and £250 respectively.
Exeter, Royal Devon and Exeter Hospital.—Sen. H.S. £210.
Greenwich Metropolitan Borough.—Obstet. Consultants. 3 to 5 guineas per consultation.
Hove, Carr-Burton Memorial Hospital, Sackville-road.—Res. M.O. £150.
Hull Royal Infirmary.—Asst. H.S. £150.
Hyde Borough.—Part-time Asst. M.O.H. £300.
Infants Hospital, Vincent-square, Westminster.—Asst. P.
Italian Hospital, Queen-square, W.C.—Asst. Anæsthetist,
London Female Lock Hospital, 283, Harrow-road, W.—First H.S. At rate of £200. Also Second H.S. At rate of £150.
London Temperance Hospital, Hampstead-road, N.W.—H.P. At rate of £100.
Norwich, Norfolk and Norwich Hospital.—Hon. Radiologist.
Oldham, County Borough of.—Asst. M.O. and Asst. Tub. O. £750.
Penn, Bucks, Homerton Residential School for Deaf Children.—M.O. £40 10*s.* plus 11*s.* a head for attendance.
Plaistow Fever Hospital.—Second Asst. M.O. £400.
Prince of Wales's General Hospital, Tottenham, N.—Hon. Asst. Radiologist, Physio-Therapeutist. Also Hon. Asst. S.
Richmond, Surrey, Royal Hospital.—Hon. S. to Out-patients. Also Jun. H.S. At rate of £100.
Royal Army Medical Corps.—Commissions.
Salford Education Committee.—Asst. School M.O. £600.
Ventnor, Isle of Wight, Royal National Hospital for Consumption and Diseases of the Chest.—Jun. Res. M.O. At rate of £300.
West London Hospital, Hammersmith, W.—Hon. S. to Throat, Nose, and Ear Dept. Also Hon. Obstet. Reg.
Worcestershire County Council.—Asst. County M.O. £600.

The Chief Inspector of Factories announces vacant appointments for Certifying Factory Surgeons at Farnham (Surrey), Stock (Essex), and Downham Market (Norfolk).

Births, Marriages, and Deaths.

BIRTHS.

LAIRD.—On Dec. 15th, at Milestone House, Blackwater, Hants, the wife of D. A. Laird, F.R.C.S.E., of a son.

MILLIGAN.—On Dec. 13th, the wife of Norman Milligan, M.B., of a daughter.

DEATHS.

BOOTH.—On Dec. 17th, suddenly, at Marine-parade, Worthing, Lionel Booth, M.D., aged 85.

DAVY.—On Dec. 20th, suddenly, at West End-lane, N.W., William Bradshaw Davy, M.R.C.S., L.R.C.P.

DOIDGE.—On Friday, Dec. 17th, at Kylemore, Glastonbury, Maurice John Doidge, M.D., aged 67.

TODD.—On Dec. 16th, of heart failure, Henry Ross Todd, F.R.C.S.I. and L.R.C.P.I., of The Rookery, Aston Clinton, and Brook-street, aged 64.

SKIPWORTH.—On Dec. 17th, very suddenly, at Market Overton, Oakham, Philip Lyonel Grey Skipworth, M.R.C.S., L.R.C.P., aged 55.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

THE Guernsey and Alderney Division of the British Medical Association having learned of the further curtailment of the already inadequate scale of salaries for Poor-law Board appointments in the Channel Islands, is advising intending applicants to refer to the General Secretary of the Association at Tavistock-square.

Notes, Comments, and Abstracts.

THE HISTORY OF PUBLIC HEALTH LEGISLATION IN ENGLAND.

A Chadwick lecture on Legal Conceptions of Public Health was given by Mr. WILLIAM A. ROBSON, Ph.D., Barrister-at-Law, at the Royal Sanitary Institute on Dec. 13th.

Public health legislation, said Mr. Robson, had existed in England from comparatively early times, but was of a spasmodic character and dealt with isolated matters affecting health; in the reign of Richard II. for instance, it was enacted that the filth and entrails of slaughtered beasts should not be put into ditches under a penalty of £20; in 1576 an enactment prescribed a penalty for not scouring ditches by the roadside. Later, Lord Chief Justice Coke, commenting on an Act of James I., which made it a felony if a person with the plague "wilfully and contemptuously goes and converses in company," was apparently surprised to find that such an Act applied to person of all degrees. An early forerunner of the Sale of Food and Drugs Acts was an Act of Charles II., whereby French wine was not to be mixed with Spanish wine, cider, &c. After the Great Fire of 1666 statutes were made for the rebuilding of London with broad streets and for limiting the height of the houses. In 1753 legislation required ships to carry out quarantine more readily; in the event of refusal to proceed to the quarantine station the authorities were allowed to fire on the ships. These spasmodic attempts at sanitary legislation of a penal character were futile because there was no administrative authority to watch over it and carry it out; the Industrial Revolution bringing about the massing of large numbers of people in small urban areas made such gentle and self-reliant legislation ineffective. Broadly speaking, the suppression of nuisances comprised almost the whole system of public health for hundreds of years preceding the nineteenth century. The new idea of sanitation evolved by Chadwick had the celebrated lawyer, Toulmin Smith, as its great opponent; with incredible learning and care he proved that it was an infringement on the constitutional liberty of an Englishman to require him to keep himself clean. Health by Act of Parliament he declared to be impossible; the idea of setting up a separate Department of State to administer health legislation was against the Constitution; the enforcement of a sanitary code was on the same basis as the enforcement of a religious creed. In a classical work "The Parish," he stigmatised all this effort as communism. In 1848 the first general Act, dealing with public health from the modern point of view, was passed; it set up a General Board of Health and enabled certain provisions such as water-supply and sewers to be made. The whole of the structure of this legislation was cautious; for instance, a commission of inquiry was not to be sent to any provincial town unless the annual death-rate exceeded a certain figure. The Act of 1872 divided the country into sanitary districts, it permitted the appointment of medical officers of health and inspectors of nuisances, and established the principle of the grant-in-aid, which Mr. Robson classed with drains as among the greatest of English inventions. The existing Public Health Acts were codified in the Act of 1875. In the main the structure of the Public Health Acts have not changed, and a comparison of the Public Health Acts of 1925 and 1875 shows that both are concerned with the same elementary subjects, such as streets and cellar dwellings. The more important legislation on health matters is contained in other Acts such as the Sale of Food and Drugs Acts and the Milk and Dairies Act, 1922, which aim at ensuring a pure food-supply; the Factory Act of 1901, which deals with the health and safety of millions of employed persons; the Merchant Shipping Acts, dealing with the health of crews; the Maternity and Child Welfare Act of 1918, in which a new idea—the responsibility of the State for the health of the expectant and nursing mother and of young children under 5 years—finds its way to the Statute Book; the great Education Act of 1921, Part VII. of which deals entirely with the health of children; the Workmen's Compensation Act, a means of bringing indirect pressure to bear on employers to prevent occupational diseases; and the Housing Acts passed since the war. To-day public health, as such, is seldom thought of by the legislature; it is regarded as an important matter to be taken into account in dealing with a large number of other problems with which it is now seen to be closely connected.

With the development of preventive medicine, continued Mr. Robson, there has been a development of preventive justice which enables the courts to order the removal of dangers before they spread disease. To-day a diseased carcass can be condemned before it has set up disease, whereas in the legislation of Charles II. the French wine had to be already adulterated before a penalty could be enforced. Other outstanding features in the legal framework of the English Public Health system include (1) an autonomous local authority elected on a democratic basis, as contrasted with the French prefectoral system; (2) inspection, coördination, and advice from the Central Government made more acceptable than it might otherwise be by the ingenious device of the grant-in-aid; (3) powers in default by a local authority over a private citizen, by a county council over an inferior authority and finally by the Minister of Health; and (4) a great extension in the conception of what is involved in the public health idea. The whole question of noise, for instance, and its effect on health will eventually be considered a matter of first importance; beautiful surroundings in themselves may be found to be an element in the maintenance of health. Mr. Robson thought that an expert administration will not carry us far enough, and that the newer legislation will set up advisory bodies with powers to spend money. New factors in public health will arise, education in civics will bring about a state of affairs in which advances will not be the result of legal sanctions but of voluntary effort, and public opinion is the greatest sanction of all.

MEDICAL LITERATURE AND JOURNALISM.

IN a lecture at the Royal Institution on Thursday, Dec. 9th, Sir Squire Sprigge traced the development of medical literature from its origin in the Corpus Hippocraticum down to the present day. Disclaiming any attempt to review medical history, except in so far as it was represented by the great authors whose names were landmarks, he referred to the records of the famous anatomical work of the Alexandrian School in relation to the knowledge of structure displayed by Hippocrates, and indicated the additions made to scientific learning in their several ways by Galen and Celsus. In the Dark Ages, he said, no medical works of any significance appeared, the literary activity of those times being represented mainly by theological disputes; but when the story was taken up by the Arabian school of medicine—an outcome of the rise of the Mahometan faith—real advances occurred as was clear from the writings of Avicenna and others. When European learning revived with the Renaissance there were many authors, the lecturer said, to be mentioned both for their clinical contributions to the science and their anatomical researches preparatory to Harvey's great discovery. These he enumerated, with comments upon their individual discoveries, ending with an expression of regret at the destruction of Hunter's original work on comparative anatomy, which had perished in the absence of any medical journalism.

On Thursday, Dec. 16th, Sir Squire Sprigge dealt with medical journalism, and began by pointing out that the invention of printing was followed by no real developments in any journalism, as to-day understood, for many years, the place of the newspaper in the seventeenth century being taken by "News-Letters" and "Corantos" which had but a small circulation, and were the development of private communications to distinguished persons by agents who were called "intelligencers," and often were indistinguishable from political spies. In the middle of the seventeenth century letters of this sort began to be printed, mainly in Holland, but, said the lecturer, Governments, and especially the British Government and the Star Chamber, visited with severe penalties those who attempted to circulate the Dutch "News-Letters" in this country, or to print their similars in England. A few gazettes received a licence, the *London Gazette* remaining to-day as their only descendant. When in the next century journalism began to arrive, there were no papers devoted to science, and the early scientific or philosophic compendiums, while purporting to report medical affairs together with all other scientific or artistic matter, practically excluded medicine. At the close of the eighteenth century, and spurred by a continental model, medical journalism appeared in the form of certain monthly magazines, whose demand, said the lecturer, could be gauged by the fact that two of them soon took to quarterly issue; and it was not till 1823, when THE LANCET was founded by Thomas Wakley, the coroner for West London and Member of Parliament for Finsbury, that any weekly journal was in existence devoted solely to the publication of medical literature and the consideration of medical politics. The lecturer described the sensational episodes associated with Wakley's early attempts to reform medical education and hospital administration which gradually came to receive the support of the very persons who had been initially attacked, with the result that in 1858 the Medical Act was passed which secured the standardisation of medical education and the publication of a Government Register on which the public could find the names of the properly qualified. The lecturer concluded by contrasting the position of 100 years ago when there was only one weekly medical journal and that of to-day when the catalogue of any large library would show four or five columns devoted to the subject.

INTERNATIONAL AID FOR MERCHANT SEAMEN.

THE report of the International Red Cross Conference on the Health of Seamen held last summer in Oslo, Bergen, and Trondhjem has just appeared.[1] It contains important international data on the problems of the health and welfare of seamen. In addition to the proceedings of the Conference, in which delegates from most important maritime countries took part, as well as representatives of the League of Nations, International Labour Office, and the ship-owners' and seamen's organisations, there are reports from Canada, Finland, France, Germany, Great Britain, Holland, Italy, Norway, Spain, and the United States of America.

The Conference, it will be recalled, was convened by the Norwegian Red Cross Society and the League of Red Cross Societies to bring together the national Red Cross Societies of the maritime countries and other organisations interested in the seaman, in order to investigate measures for his welfare, and to examine what the Norwegian Red Cross Society had already done in this field. This Society had tentatively established medical stations for seamen in 21 medical ports, had published in Norwegian a medical manual for ships not carrying a doctor, and had prepared a standard medicine-chest, also intended for ships not carrying a doctor.

Bureaux in Sea-ports.

The resolutions passed by the Conference recommended inter alia the establishment of bureaux in seaports throughout the world for furthering the health and general welfare of seamen, their functions being to furnish (*a*) treatment or information as to where appropriate medical advice and treatment could be secured; (*b*) postal facilities; and (*c*) information as to the local recreational and social facilities and sleeping accommodation. It was further recommended that a standing committee on the welfare of seamen should be appointed by the League of Red Cross Societies in coöperation with the League of Nations, the International Labour Office, and other national and international organisations concerned. This committee was to investigate the standardisation of ships' medicine-chests, medical manuals, and a wireless code for medical consultations at sea. It was also to inquire into welfare conditions on board and in port, and the provision of recreational facilities for seamen of all nationalities.

All the speakers at the Oslo Conference emphasised the importance of international aid for merchant seamen. Every seaman spends a large part of his life in foreign ports, and it is just in such places, where, after the monotony of a long voyage, he lands to find himself a stranger, that he most needs help and guidance. Such help will only be forthcoming through international agreement and effort.

Dr. Ustvedt (Norway) pointed out the special dangers to which sailors are exposed, particularly tropical and venereal diseases. To both they frequently fall victim through ignorance, less frequently through apathy. The first step is to teach them the nature of these diseases and how to protect themselves against them. With regard to venereal disease, something must be done to raise the mental and moral outlook of the seaman and to give him some interests outside his work. Ships' libraries are a step in this direction, but there are not nearly enough of these.

Dr. Engelsen (Norway) put in a plea for Red Cross medical stations in ports and emphasised the support which the Norwegian Medical Association had given in this direction. Later on he spoke of the need for compulsory medical examination for all seamen prior to embarkation.

Free Treatment of Venereal Disease.

Prof. Bruusgaard (Norway) spoke of the importance of early treatment of syphilis, and instanced the results obtained in Sweden since the passing of the law of 1918 instituting free treatment for the general public. Between 1919 and 1924 the yearly number of cases of acquired syphilis fell from 3739 to 600 among men and from 2084 to 250 among women. The decrease for gonorrhœa was from 15,157 to 8020 for men and from 5314 to 2279 for women. In Denmark, where there is a law based on the same principle, a considerable decline has also been noted, but it is less striking than that in Sweden. In Belgium, where free treatment has been available for some years, the results show a decline of four-fifths. In Oslo during the same period the number of notified cases of infectious syphilis fell from 656 to 486 among men and from 258 to 214 among women, but the number of cases of gonorrhœa actually increased. Prof. Bruusgaard considered these figures too high and attributed them to defects in the Norwegian system. As to seamen, he advocated a methodically conducted educational campaign and easy access to free treatment, which should be carried out ashore.

Prof. Almkvist (Sweden) drew a sympathetic picture of the seaman's life and psychology and pointed out the combination of circumstances—extremely strong temptations, poor capacity to resist, and serious danger of infection—which often led to his downfall. He regretted the lack of statistics for the merchant service, but quoted comparative figures for the German, British, and American navies, and showed the rapid decrease of venereal diseases in the German navy after the introduction of prophylactic treatment in 1899. He also showed how unfavourably the venereal disease rate for the Swedish navy (15·5 per 1000 in 1924–25) compared with that for the general population in Sweden (1·88 per 1000 inhabitants in 1924). Prof. Almkvist recommended the cleansing of ports from all those who exploit seamen, the increase of recreational facilities, and he strongly advocated the provision of prophylactic treatment on board.

The danger of tuberculosis spreading on ships was mentioned by Dr. Heitmann (Norway), who pointed out how easy it was for a tuberculous seaman to embark on a long voyage without his disease being discovered. Dr. Clark (United States Public Health Service) reiterated the importance of prompt discovery of tuberculosis among seamen and outlined the American hospital system for tuberculous sailors.

Mr. Bowden (Great Britain) explained the National Health Insurance Scheme as it applied to seamen.

Legislation in Various Countries.

The second part of the report contains useful data regarding legislation in the various countries and other measures which have been taken for the health and welfare of seamen. Canada has a sick mariners' fund, to which all ships entering her ports contribute, and they thereby acquire the right to send sick members of their crew to hospital free of charge. Finland sends 24,125 of her sons to sea in Finnish vessels and 20,000 more in foreign vessels—a large number for a small country. The Finnish Sailors' Law of 1924 provides for compulsory medical examination and free treatment during sickness at the ship-owners' expense. Dr. Valtari (Finland) reported that, of Finnish sailors in hospital, 68 per cent. were suffering from venereal disease, 18 per cent. from affections of the lungs, 10 per cent. from accidents, and about 4 per cent. from insanity or weakmindedness. Germany has a *See-Berufs-Genossenschaft*, which undertakes seamen's insurance and looks after their welfare and protection against accidents. Great Britain has a law that ships carrying over 100 persons must carry a duly qualified medical man, but this touches only a minority; the total number of surgeons on 9744 vessels in 1923 was only 370. In Spanish ports seamen, of whatever nationality, receive free treatment in either Red Cross dispensaries or naval stations. The United States Public Health Service operates 25 marine hospitals and 127 other relief stations in the principal American ports.

Many other facts concerning merchant seamen and their welfare are contained in this section of the report.

[1] Report of the Oslo Conference, published by the League of Red Cross Societies, 2, Avenue Vélasquez, Paris, VIII. Pp. 211. 2*s*. 6*d*.

ATAVISM, CHRISTMAS AND MR. PEPYS.

It is said that in bygone days the people of St. Kilda were sometimes overtaken by an unreasonable sense of terror. Losing their nerve and being filled with a strange dread, they would slink off to hide in caves in the middle of the island, and there would remain a day or two before returning sheepishly to their homes. The outside observer might think that the modern celebration of Christmas had some of the features of such an epidemic. Every year the population makes a premeditated attempt to escape from the bothers and terrors of its daily business. It rushes off to the privacy of its family circle and does its best to believe in primitive pleasures as proof against the cold realities of things outside.

The attainment of so simple a state of mind, as everyone knows, involves a lot of preparation; nothing must be lacking to make Christmas different from ordinary days. The presents, the cards, the food, the carols, the good wishes—these all form entrenchments behind which the harassed mind may imagine that simple things are best. Finally, the literature of Christmas should suit the food. At all costs the wrong books must be excluded from the ring so carefully prepared; introspection or the study of calories can have no part in a successful Christmas. Of the right books none better can be found than the edition of Samuel Pepys's Diary now prepared by Mr. O. F. Morshead under the name of "Everybody's Pepys" (G. Bell and Sons, London, 1926, pp. 570, price 10*s*. 6*d*.). The Diary has all the pleasant simplicity that belongs to the season; it restores a sense of proportion (often badly needed) by its description of another age; its people are fully up to date though their problems have a suitable tinge of antiquity. Their servants, for instance, were as troublesome as ours, as may be seen from this extract from the admirable index:—

Doll, chambermaid, very ugly; leaves. *Sarah*, combs Pepys's hair; Pepys and Mrs. Pepys fall out about her;

leaves; goes to Sir W. Pen; he puts her away. *Mary*, housemaid, left after ten weeks. *Susan*, cookmaid, a willing wench but no good cook; Pepys gives her sixpence for doing well (became distracted and drunk and departed). *Hannah*, cookmaid (left in a huff). *Jinny*, being cleansed of lice by Mrs. Pepys, runs away; "no luck in maids nowadays."

All this may strike a chord of sympathy in the modern householder, but since no longer do we baste our maids with a broom—whilst they no longer sit by the bedside mending our breeches, or rise at 2 in the morning to do the washing—it is so remote that it gives more pleasure than pain. The troubles of our neighbours, even after centuries, are often very soothing.

The present edition reduces a book of over a million words to one of reasonable proportions. There is no annoying bowdlerisation, and the charm of the original remains. No volume containing so many illustrations by Mr. Ernest H. Shepard could fail to attract the public, but this one would recommend itself without them. When after Christmas the reader returns, somewhat sheepishly, to real life, it will remain to recall, perhaps, a season of atavistic enjoyment.

PUBLIC HEALTH IN SOMALILAND.

THIS British Protectorate, proclaimed in 1884, contains about 68,000 square miles, and has an estimated population of 300,000, mostly Mohammedans. A new hospital, opened in June, 1925, contains two large wards, each of 28 beds, and three private wards. In addition, there is a ward of 40 beds for paupers and aged people who need medical treatment other than hospital treatment. There is an excellent operating theatre, an X ray department, and a research laboratory furnished with the most up-to-date equipment. The figures relating to the number of admissions to hospital and attendance of out-patients show an increase, which indicates a growing confidence on the part of the native population in the efficiency of European methods as opposed to their own primitive ways. The following is a schedule of the cases treated in 1925: scurvy 6, tropical ulcers 4469, beri-beri 2, constipation 3500, malaria 830, relapsing fever 118, leishmaniasis 1 (the first known case in Somaliland), erysipelas 1, chicken-pox 62, influenza 247, dengue 85, dysentery 30, diarrhœa 379, tuberculosis 278, leprosy 6, measles 8, syphilis 601, gonorrhœa 263. It is stated that during the year the general health of the European population was good; 6 Europeans contracted dengue in Berbera.

WOODHALL SPA.

THIS Lincolnshire spring, which was discovered a little over 100 years ago in the course of an unsatisfactory boring for coal, provides at a depth of 500 feet a strongly saline water containing unusual quantities of bromine, iodine, and calcium, which has been found serviceable in the treatment of neurasthenia, myxœdema, and enlarged glands. The water is applied externally to cases of rheumatism, fibrositis, surgical thickenings, and fibrous ankyloses in the neighbourhood of joints, as well as of subinvolution and pelvic inflammations. The natural deposit in the spring is employed in mud baths or "fango" packs. At the bath establishment there is a trained nursing and massage staff, competent to give various forms of electrical treatment—baths, ionisation, Bergonié, reducing—combined with radiant heat or ultra-violet light, and the various baths (Nauheim, Bertholet, local steam, vapour) and douches. Ultra-violet light has been applied to cases of psoriasis and other cutaneous disorders, and to children convalescing from infectious disease. The establishment is situated among fine trees in a charming wood, the good roads, which dry quickly after rain owing to the gravelly subsoil, encourage gentle walking exercise; there are many seats, and little motor traffic to disturb. Woodhall is in the midst of an agricultural district, Food is fresh, and as for fish, Grimsby is but 30 miles away. The golf links are close to the Spa. A through-carriage runs to and from King's Cross daily in 3½ hours. The Spa has no physician-superintendent, but two physicians are attached to the Alexandra Hospital, which has 30 beds for patients of either sex suffering from rheumatic conditions likely to benefit by local treatment. A home for gentlewomen provides at moderate rates for 20 ladies similarly affected.

ENERGEN BREAD.

WE are asked by the proprietors of Energen Bread, Energen Foods Co., Ltd., Willesden, to call attention to the fact that the company are supplying to diabetics and other patients in poor circumstances Energen bread at a discount of 15 per cent. In order to secure the discount, the dealer who supplies the bread must receive from a doctor a certificate showing that the patient is indigent.

STANDARD DRESSINGS.

THE Minister of Health has suggested to boards of guardians in England and Wales the desirability of securing uniform good quality in the surgical dressings used in the hospitals under their charge. For National Health Insurance purposes dressings must conform to standards specified in the British Pharmaceutical Codex, the testing of samples being carried out at the Manchester Testing House, the director of which is prepared to test and report, at specially reduced fees, upon samples sent by boards of guardians.

The more important surgical dressings for which the British Pharmaceutical Codex specifications are available are as follows:—

Bandages:—Calico (bleached and unbleached); crêpe; open wove (white and grey); and plaster-of-Paris.

Gauzes:—Boric; carbolic; double cyanide; iodoform; picric; sal-alembroth; sublimate; and unmedicated.

Cotton Wools, absorbent:—Boric; sal-alembroth; and unmedicated.

Gauze and Cotton Tissue. Lints:—Boric; sal-alembroth; and unmedicated.

Tows:—Carbolised and unmedicated.

The testing house holds a sample of unmedicated cotton wool which complies with the specification of the British Pharmaceutical Codex. The Minister points out the economy secured by the Health Insurance service from the adoption of a standard length of four yards to replace the usual six yards standard for bandages.

TREATMENT OF TAPEWORM.

Dr. B. Klein,[1] assistant in Prof. W. Mollow's clinic at the University of Sofia, thinks that granati cortex has lately been too little used in the treatment of tapeworm. He attributes its disrepute to the fact that it has been given by the mouth, whereas he finds it far better to pass it into the duodenum by Einhorn's catheter. He infuses 150 g. of the powdered root bark for 12 hours in a litre of water, and boils down the infusion to one half. Before use this preparation is warmed to 100° F., and three doses—each of 65 c.cm.—are given at half-hour intervals; they are followed by a laxative, after which the catheter is carefully withdrawn. Since March, 1923, he has treated 19 cases, and has had only two failures; in these cases too sudden withdrawal of the catheter caused vomiting. The other 17 comprised 12 cases of *Tænia mediocanellata*, four of *T. solium*, and one of *Hymenolepis nana*. Twelve of the tæniæ were expelled complete; four were broken, but their heads were recovered with the segments. The *H. nana* was not found, but no ova have been seen in the two years since the treatment was given. Dr. Klein states that this method was employed by V. Bettleheim in 1887, and that in 1924 H. Schneider had great success from a combined treatment with granati cortex and filix mas.

BOURNVILLE PRODUCTS.

WE have received from Messrs. Cadbury Brothers assorted specimens of the latest productions from Bournville. These include boxes of Carnival, King George, and Marlborough chocolates, which are established favourites with different tastes, and boxes of assorted tablets flavoured with fruit or nuts, and in one case definitely compounded to appeal under the title of "Bitter" to those whose palates do not allow them to relish anything sweet. It is superfluous to mention the qualities of Bournville Cocoa as a beverage made with water, milk and water, or milk, and sweetened according to will. All the samples are put up with the attention to appearance associated with the firm.

CHROMIUM-COATED INSTRUMENTS.

Messrs. J. Smith, Northampton Plating Works, 230 St. John-street, Clerkenwell, London, E.C., have submitted to us a nickel-silver tongue depressor and a vaccinator of steel, both of which have been subjected to a deposit of chromium. The claim made for them is that they do not tarnish, corrode, or rust when in use, and tests would seem to substantiate this claim. Placed for 24 hours in strong "Fecto" (Parke Davis) solution, 1–20 perchloride of mercury or 1–20 carbolic, the instruments do not show corrosion neither does several days' submersion in water appear to affect them. If the chromium deposit stands the test of time, instruments treated in this way should be welcomed by the surgeon.

ÆTHER PURISS.

Æther Puriss, the product of the British Drug Houses Ltd., and noticed in THE LANCET of May 23rd, 1925 (p. 1083), is now being sold at a price comparable with that of ordinary anæsthetic ether. The reduction has been made possible by an increased demand for this pure ethyl ether.

[1] Arch. f. Schiffs- u. Tropen-Hygiene, 30, iii., 250.

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☞ *Readers in search of a given subject will find it useful to bear in mind that the references are in several cases distributed under two or more separate but nearly synonymous headings—such, for instance, as Brain and Cerebral, Heart and Cardiac, Liver and Hepatic, Child and Infant, Goitre and Thyroid, Diabetes, Glycosuria and Sugar, Eye, Ophthalmic, and Vision, Lunacy and Mental Disease, Arsenobenzol and Salvarsan, &c., &c., and that regional headings are more frequently used than pathological. Institutions and Corporations with the right to the prefix Royal will be found under that prefix, with the exception of Hospitals, which will be found under that heading; and Medical Societies, which are separately indexed under Societies. All Universities are indexed under the word University. (A.) = Annotation, (C.) = Correspondence, (N.I.) = New Inventions, (L.A.) = Leading Article, (M.L.) = Medico-legal, (M.T.T.) = Modern Technique in Treatment, (O.) = Obituary, (P.I.) = Parliamentary Intelligence, (R.) = Review, and (R. and A.R.) = Reports and Analytical Records.*

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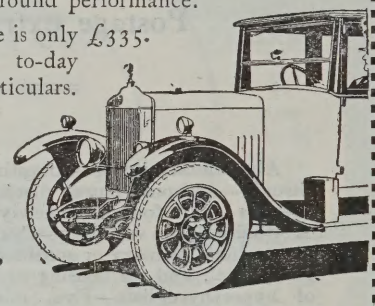

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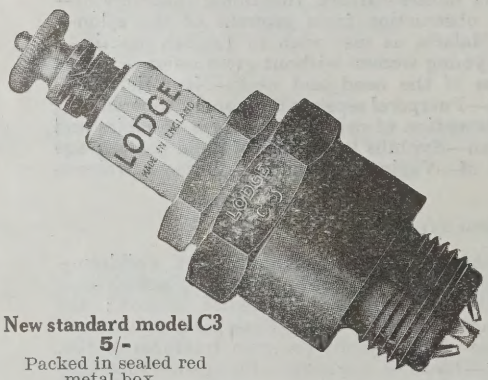

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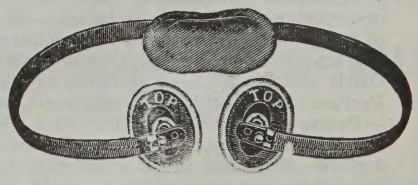

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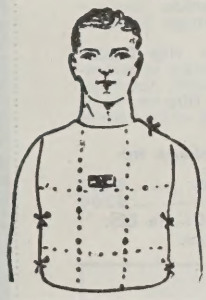

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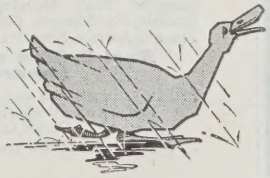

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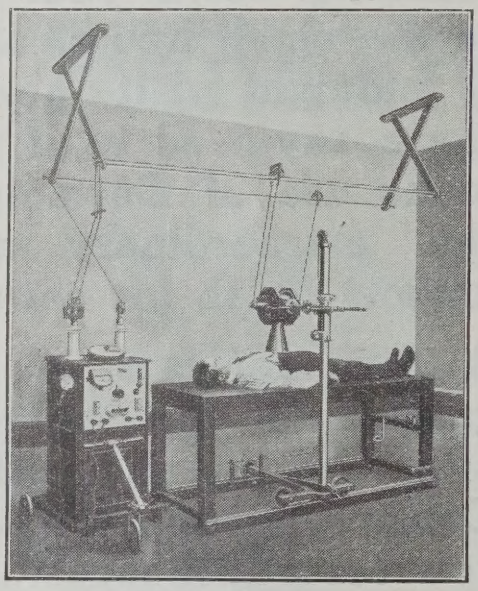

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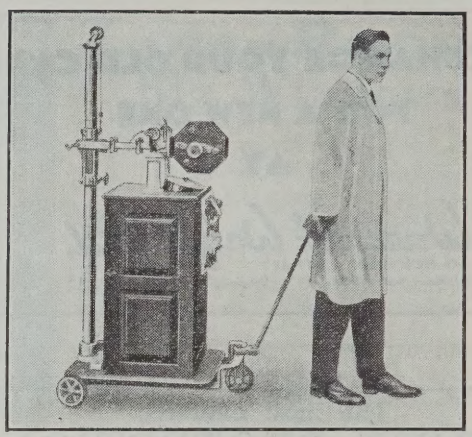

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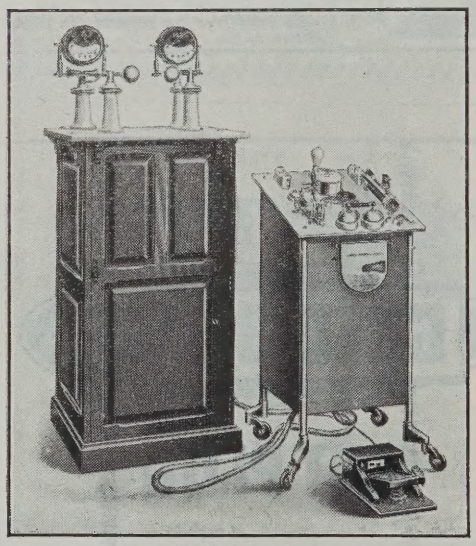

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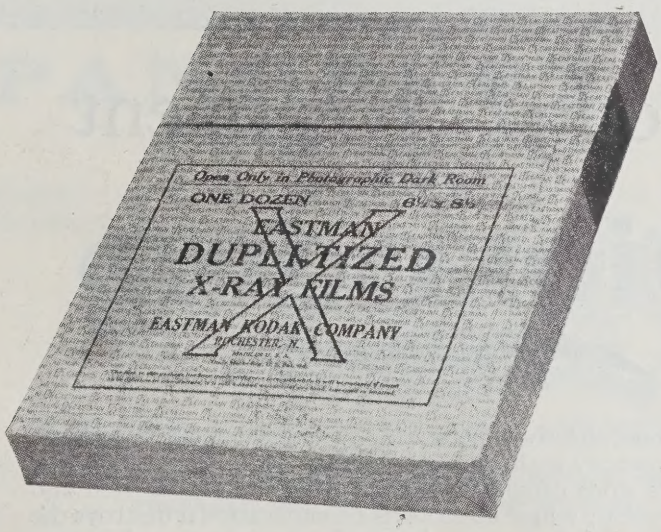

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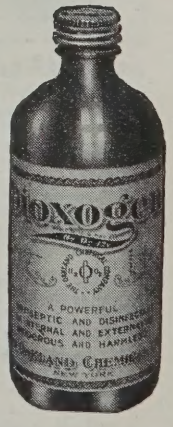

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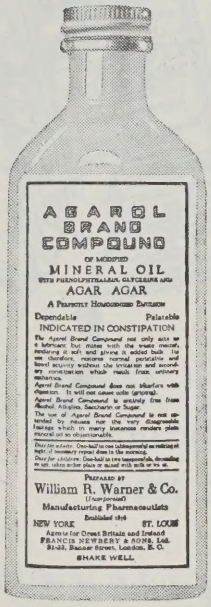

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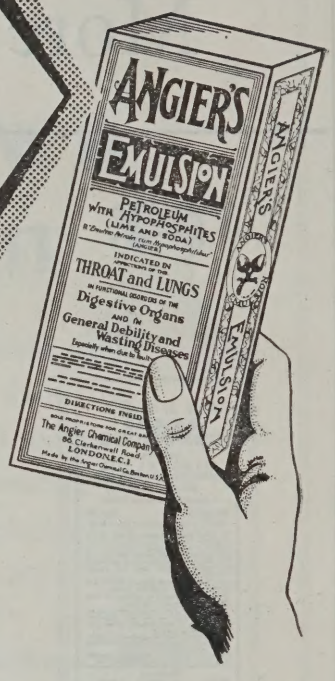

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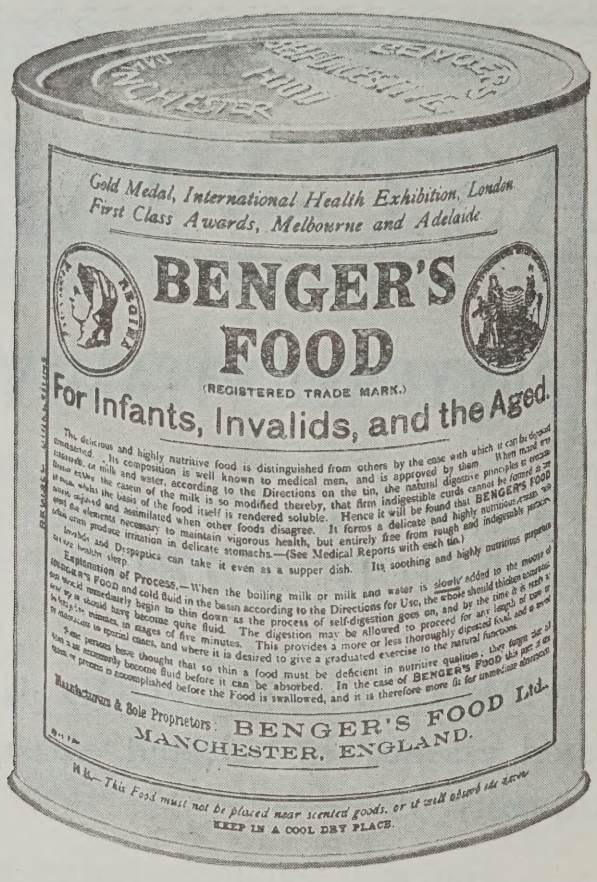
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KEEP IN A COOL DRY PLACE.

Benger's Food—*the adjustable diet.*

The "LANCET" describes it as "Mr. Benger's admirable preparation."

Owing to the presence of the natural enzymes of digestion (*Amylopsin* and *Trypsin*), and its method of preparation for a patient, the extent of self-digestion of Benger's Food and the milk with which it is mixed *can be regulated to suit the digestive powers of the patient.*

Benger's Food is prepared with fresh cows' milk. It forms a dainty cream which becomes the easier of digestion the longer it is allowed to stand after mixing. The process may be arrested at any time by simply bringing the mixture to the boil. (A useful average time for standing is 15 minutes).

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Benger's Food is of the highest nutrient value and is not found to pall, even when taken over long periods.

A Physician's Sample will be sent post free to any member of the Medical Profession making application to the Proprietors—

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Benger's Food in sealed tins is on sale throughout the world by chemists, etc.

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M.141

BENGER'S Food

TRADE MARK.

MARTINDALE'S
"STERULES" OF AMYL NITRITE

For Inhalation, containing 1, 2, 3, 4, 5, 6, or 10 minims.

For relieving Angina, Spasmodic Asthma, Migraine, Post-partum Hæmorrhage, Hæmoptysis, Sea-Sickness, to ward off Epileptic Attacks, &c., and as an antidote to Chloroform.

Price 3/- per Box of 12 Sterules.

WE TAKE THIS OPPORTUNITY OF THANKING OUR MANY FRIENDS IN THE PROFESSION FOR THEIR KIND RECOMMENDATION OF OUR PRODUCTS, WHICH HAVE BEEN ASSIDUOUSLY BROUGHT TO THEIR NOTICE DURING THE LAST FIFTY YEARS, AND WE DESIRE TO POINT OUT THAT THE FOLLOWING ARE AMONGST OUR TRADE MARKS:

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"PARAFFAGAR"	**"METHYSAL" BALM**
"STERULES"	**"SEDASPRIN"**
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"TYLLITHIN"	**"TYLCALSIN"**

WHEN MEDICINES ARE ORDERED UNDER THESE RESPECTIVE TRADE MARKS, AND OTHERS WHICH WE HOLD, OUR PRODUCTS ONLY MAY BE SUPPLIED. WE SHOULD BE GRATEFUL FOR INFORMATION, WHICH WOULD BE DEEMED CONFIDENTIAL, OF ANY CASES OF INFRINGEMENT.

"ASPRIODINE"
(R.T.M.)

THE new Aspirin compound, combining the therapeutic properties of Aspirin and Iodine in a stable, definite chemical combination. Of decided value in rheumatic affections and arteriosclerosis and wherever Iodides have proved beneficial.

Leaflet on request.

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THE Bromine analogue is of value in all forms of nerve trouble and in dysmenorrhœa, asthma, epilepsy, insomnia, neuralgia; in short, in all cases where the combined qualities of Aspirin and Bromide are indicated.

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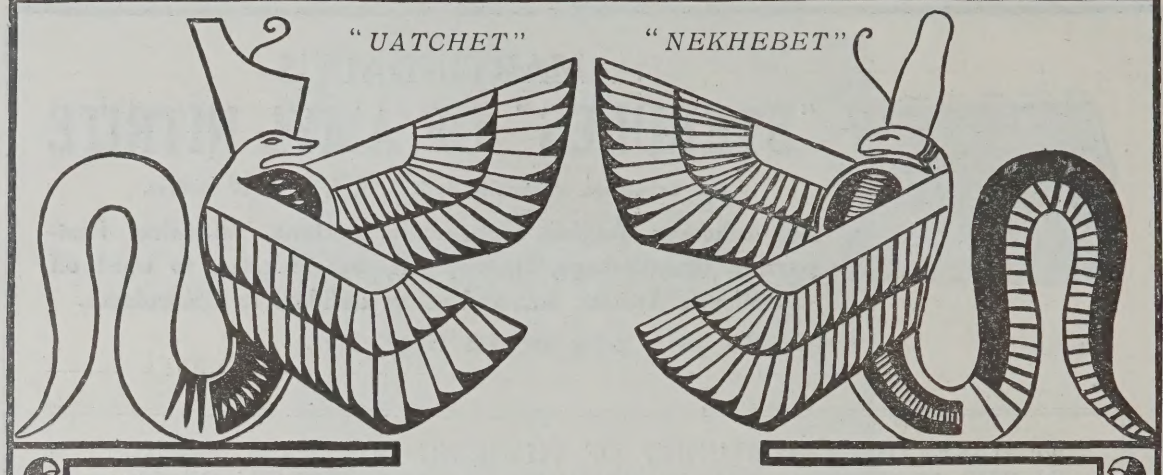
Telegraphic Address—**Martindale, Chemist, London.** *Telephone Nos.:* **Langham 2440 and 2441**



For the Delicate Child

THE delicate, backward, nervous or unstable child is ever a problem in the children's clinic. Very frequently faulty metabolism lies at the seat of the trouble, involving an inherent incapacity to make adequate use of the essential and vitalizing elements of ordinary nourishment.

Liberality of the nitrogenous or building elements of the diet to the limit of digestive capacity is recommended by authority. Two teaspoonfuls of "Ovaltine" dissolved in half a pint of milk produces a tonic and nutritive beverage well adapted to this requirement. It gives a protein to non-protein ratio of approximately 1 to 3.5 which is a liberal apportionment of the nitrogenous element. The proteins of "Ovaltine" are those derived from "Winter" Malted Barley, Eggs and Milk, valued sources of nutritive material for the delicate child.

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TONIC FOOD BEVERAGE

Such a diet taxes to the minimum the digestive function because "Ovaltine" modifies the milk curd to a light, easily digested coagulum. Moreover, clinical evidence plainly shows that "Ovaltine" is well borne in spite of food intolerance, anorexia and those numerous perversities of alimentation which undermine the constitution and frequently result in permanent injury.

A liberal supply sent free for clinical trial on request

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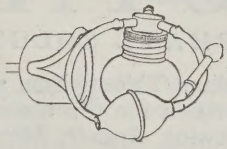
M215

The Effective Treatment of Tonsillitis, Sore Throat and colds in general

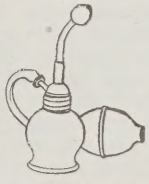
NEBOLINE COMPOUND No. 2

Contains the oils of Scotch Pine, Eucalyptus and Cassia with Camphor, Menthol and Eucaine Hydrochloride (3¾ grains to 1 fl. oz) in a Benzoin basis.

This is one of the 'Neboline' Compounds specially prepared for use in the 'Universal Vaporiser' and the 'Aeriser' described below. In this compound the prolonged effect of eucaine is secured without the usual reaction, a quality which largely accounts for the increasing use of "No. 2."



The 'Vaporiser' reduces aqueous, oily and balsamic solutions to an almost invisible vapour without the use of steam or heat, and carries them in actual substance to the most remote positions of the respiratory tract and middle ear, not excepting the air cells and nasal sinuses. The 'Aeriser' is a less expensive model. The **Lancet** says: "They render fluids like smoke."



The formulæ of the 'Neboline' Compounds is included in our brochure, "The Treatment of Pulmonary and Bronchial Affections," which will be posted free on request.

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Manufacturers of 'Roboleine,' the Reconstructive Food which has been consistently prescribed for twenty years and used with the happiest results by Hospitals, Sanatoria and Welfare Centres.

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DIOXYDIAMINOARSENOBENZOL - GLUCOSIDE

Salvarsan Diglucoside supplied in solution form, in ampoules ready for use. More persistent than any other arsenical in its effect on the Wassermann reaction.

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Specially prepared, finely divided, pure Bismuth metal in 5% Glucose solution. Supplied in 5 cc., 10 cc., or 28 cc. rubber-capped vials, ready for use. Painless, potent, sterile and non-irritant.

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SODIUM THIOSULPHATE SOLUTION

A stable sterile solution of Sodium Thiosulphate, strength 10%. A safe and sure preparation for the treatment of dermatitis and stomatitis following Arsenic, Mercury or Bismuth medication.

GONOCOCCAL VACCINES

Manufactured in the laboratory of the Venereal Department at St. Thomas's Hospital, filled into ampoules or vials and packed in the laboratories of Boots Pure Drug Company Limited.

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The Restorative of special value in Physical Weakness, Nervous and Mental Exhaustion

'Bynogen'

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'Bynogen' is a concentrated, yet easily assimilable Food containing a high proportion of readily digestible protein, together with phosphorus in organic combination.

Approximate Percentage Composition.

Sodium Glycerophosphate	**2**
Calcium do.	**2**
Magnesium do.	**1**
Milk Proteins (Soluble)	**75**
Soluble Extract of Malt and Whole Wheat...	**20**

Indications for Use.

MALNUTRITION—Especially when due to anorexia or impairment of the digestive function.

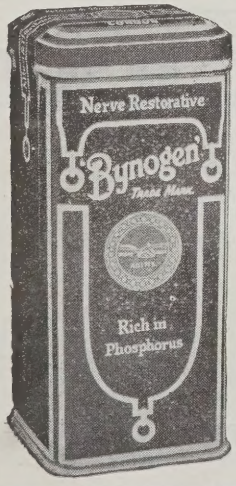
ASTHENIA—Whether the sequel of acute disease or due to physical or mental overstrain.

NERVOUS DISORDERS such as result commonly from worry or overwork.

DYSPEPSIA—Especially when associated with Gastric Ulcer or other conditions causing intolerance of ordinary foods.

IN CONVALESCENCE 'Bynogen' raises the tone of the system and restores vitality.

For the NURSING MOTHER—'Bynogen' enables the mother to maintain her strength and helps to enrich the milk.



In distinction from other casein-glycerophosphate products, 'Bynogen' is pleasant to take and has an agreeable flavour. Patients take it readily and will gladly continue its use for a sufficient time for a thorough course of treatment.

'Bynogen' strengthens the Digestion and improves the Nutrition.

Samples and Literature will be sent on request.

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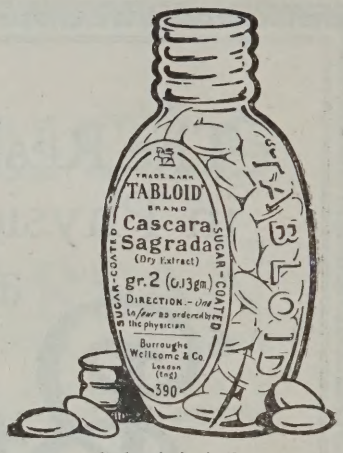
West End House: 7 Vere Street, W. 1.

Never write "Tab. Cascara" but always

'Tabloid' *Cascara Sagrada*



Reduced facsimile

See also Wellcome's Medical Diary

Then you may be certain that your patient is taking true Cascara at its best.

The utmost care having been taken to procure the finest specimens of the true *Rhamnus Purshianus*, the bark is carefully dried and fully matured, regardless of time and expense, before it is used.

This ensures a remarkable freedom from the griping tendency which characterises inferior brands. To obtain Cascara of perfect quality and constant activity, in accurate doses, always prescribe

TRADE MARK **'TABLOID'** BRAND

CASCARA SAGRADA

Supplied to the Medical Profession, in bottles of 25 *and* 100, *gr.* 2, *at* 7*d. and* 1/6 *per bottle respectively.*

Also in the following strengths: gr. 1, *gr.* 3, *gr.* 4, *gr.* 5, 0·15 *gm. and* 0·25 *gm.*

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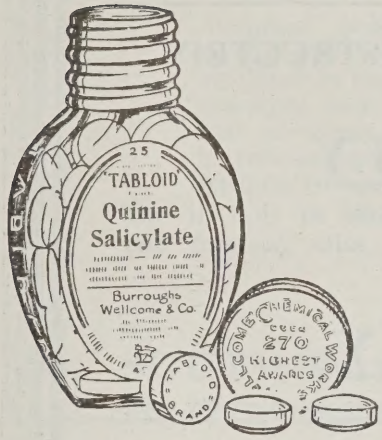
All 'TABLOID' products of Quinine are made from 'WELLCOME' Quinine, which, in purity and alkaloidal value, exceeds the standard of the B.P. The quinine is quickly soluble in the alimentary tract and is readily absorbed. Pure sugar only is used for the coated products.



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QUININE SALICYLATE

(Physiologically Pure)

Bottles of 25 and 100

gr. 1 — 8*d.* and 2/-
gr. 3 — 1/4 and 4/4
gr. 5 — 1/10 and 6/-

TRADE MARK 'TABLOID' BRAND
QUININE ACETYLSALICYLATE

Combines the properties of quinine and salicylates, eliminating the disadvantages of the latter.

Bottles of 25 and 100

gr. 3 — 1/8 and 5/5
0·25 gm. 2/- and 7/-

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OBJECTS UPON WHICH ARE DEPICTED CERTAIN ROMAN DEITIES OF HEALING: (1) MEDAL WITH A FIGURE OF JUNO LUCINA; (2) PORTION OF AN ALTAR ORNAMENTED WITH A REPRESENTATION OF ÆSCULAPIUS; (3) MEDICINE SHOVEL DECORATED WITH THE HEAL OF MINERVA MEDICA.—Among the gods indigenous to the Romans, there were, originally, none who were specifically medical divinities. The function of healing was one of many evil-averting powers exercised by any one of the principal deities—Mars, Janus, Jupiter, Juno, Diana, Carna (or Carnea, a goddess of the underworld, the protectress of the physical well-being of man), and others. There was, in these early times, no such thing as rational medicine in Italy; "remedies" were purely magical in nature. Febris, a primitive Italian deity, "the averter of fever," was, however, specifically connected with healing; her name indicates that fever was as prevalent in the region about Rome in earliest times as at present. Certain deities later evolved specifically medical attributes, and a qualifying term was then added to their names to express this definite department of their functions: thus, Juno, as Lucina (or Sospita, Fluonia, Conservatrix, Dea Natio, Opigena, Kupra), became the goddess of childbirth and of woman's life. Juno Lucina was represented, as in the illustration here reproduced, accompanied by children. Minerva, as Minerva Medica or Minerva Memor, became the patroness of physicians; she healed, especially, diseases of the ear in her sanctuary near Placentia and prescribed medicines which were dispensed in her aboratory. Early in the third century B.C. the great divinity Asklepios was imported from Greece. As Æsculapius he throve so well that in course of time his cult, so clearly defined and recognised, partially absorbed or supplanted those of some among the indigenous gods. The Æsculapius here depicted as a Roman officer is a local form found in Syria and is reminiscent of Roman Empire building in the East and of the known devotion of soldiers in camp and veterans to the cult of Æsculapius.

DATE: From earliest times onward. The objects belong to the period of the Roman Empire.

(1)

(2)

(3)

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INFANT DIET MATERIALS

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To approximate Breast Milk

COWS' MILK SHOULD BE RECONSTRUCTED

NOT ONLY

QUANTITATIVELY

by which is meant the modification of cows' milk so that it will contain approximately the same percentages of fat, salts, proteins, and carbohydrate as breast milk,

BUT ALSO

QUALITATIVELY

1.—Because the fat of cows' milk contains ten times more volatile fatty acids than the fat of breast milk.

2.—Because the protein of cows' milk contains four times more casein than lactalbumin, while the protein of breast milk contains more lactalbumin than casein.

3.—Because cows' milk contains three times more calcium salts than potassium salts, while breast milk contains more potassium salts than calcium salts.

RECOLAC

Reconstructed Milk

In RECOLAC these important differences, which are often disturbing factors in infant feeding, have all been corrected, and as a result, Recolac is pronounced "The form of Artificial Feeding which gives good results in a larger percentage of cases than any other."

INFANT MEADS MATERIALS

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MEAD JOHNSON & CO., INFANT DIET MANUFACTURERS

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THE MOST ACTIVE URIC ACID ELIMINANT

ATOQUINOL

(Allyl Phenylcinchoninester)

Atoquinol possesses pronounced analgesic, antipyretic and antiphlogistic properties. It has proved of great value when exhibited in the treatment of arthritis, gout (gastric, intestinal), neuralgia, sciatica, polyneuritis, rheumatism, etc., and it may with advantage replace the salicylates in many cases. Atoquinol is administered orally in the form of tablets (4 gr.), while Atoquinol Ointment, which is readily absorbed by the skin, may be applied locally in painful arthritis.

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OF GREAT VALUE TO THE INVALID

Burgoyne's Tintara

Ferruginous.

OBTAINABLE OF ALL WINE DEALERS

4/- 6/-

THIS PURE AUSTRALIAN WINE was introduced in 1871, it has been highly recommended by the Medical Profession in all cases where strength and nerve force have required building up. In anæmia, debility, neurasthenia and in convalescence after any illness, this full-bodied, generous wine, palatable as well as health producing, has proved itself the finest of all natural stimulants.

Sample Bottle sent free in the United Kingdom, on receipt of professional card.

P. B. BURGOYNE & CO., Ltd.,
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Trade **BYNOL** Marks

"A Perfect Combination of Malt Extract with Cod-Liver Oil"—*B.M.J.*

"Bynol" contains 30% by volume of the highest grade Norwegian Cod-Liver Oil very finely emulsified with the "Allenburys" Malt Extract and aromatics, thus producing a rich, easily digestible and palatable product. The main ingredients, particularly the Cod-Liver Oil, are rich in vitamins which are conserved in their full potency by the special processes used in the manufacture of the product. "Bynol" is of special value to those who require additional fat and vitamins beyond what is supplied by an ordinary dietary—to backward and weakly children, nursing mothers, and those suffering from malnutrition or having a predisposition to phthisis and respiratory diseases in general. The usual dosage is from one teaspoonful to one tablespoonful three times a day after meals.

In wide-mouthed jars containing 10 oz. 2/3; 20 oz. 4/-; 50 oz. 7/6.

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[*See also pp.* 10 & 21

MODERN METHODS OF TREATMENT OF

RHEUMATOID ARTHRITIS

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A COMPLETE investigation of the source or sources of infection in cases of *Rheumatoid Arthritis* is carried out and preparations of Autogenous vaccines supplied to medical practitioners *only* for the inclusive sum of £10 10 0.

N.B.—No treatment of Patients undertaken

The investigation comprises:—

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7. Preparation and supply of 20 cc. of autogenous vaccine in ampoules or bottle.
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Compound Syrup of Hypophosphites "FELLOWS"

contains chemical foods in the form of mineral salts and dynamic synergists in an assimilable and palatable compound, and has established its reputation as the *Standard Tonic* for over half a century.

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10 *for* 8d. 20 *for* 1/4
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The List of
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Clinical samples of any of these will be sent post free on request.

These Colloidal suspensions bear the mark of dependable quality of all preparations made in the B.D.H. Laboratories, and can be confidently relied upon always to exhibit in the highest possible degree the therapeutic properties peculiar to colloidal preparations.

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A Valuable Sedative Antiseptic and Healing Ointment.

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It is specially indicated in Eczema, Psoriasis, Erysipelas, Shingles, Erythema, Seborrhœa, Dermatitis, Pruritus Ani and Vulvæ, and in inflammations and eruptions of the skin, and in burns and scalds.

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Price:—10d. per tablet; **9/6** per dozen. **30/-** per dozen boxes of 3 tablets.

(The word "Sedresol" is registered under the Trade Marks Act and is the sole property of Ferris & Co., Ltd.)

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Recent literature.
Dr. H. Levisohn, Munich : "Bronchitis Therapy with Polygalysate (Buerger)." — *Münch. Med. Woch., 1926, No. 43.*

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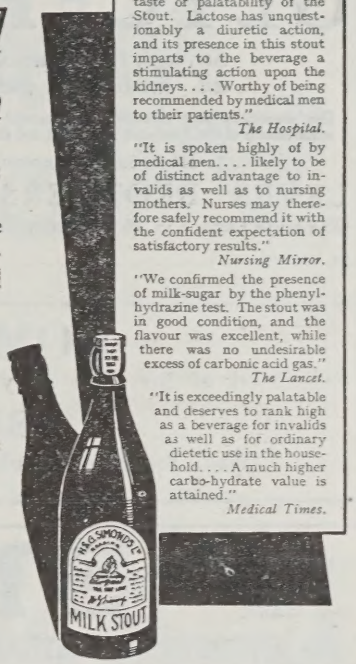

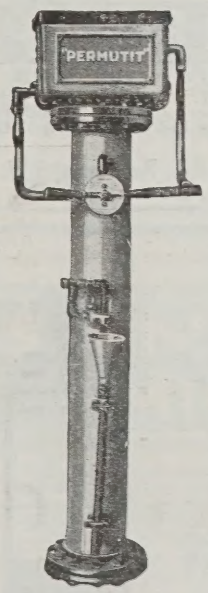

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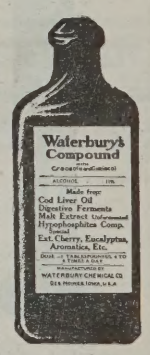

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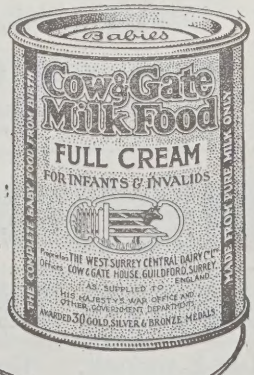
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An old-established home-like Institution for the treatment of MENTAL AFFECTIONS in BOTH SEXES.

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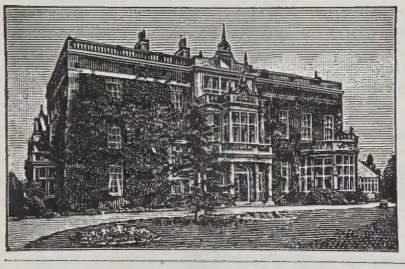

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Exclusively for PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES.

This institution is devoted to the Care and Treatment of persons of both sexes at moderate rates of payment.
Voluntary boarders not under certificates are admitted.
Under special circumstances the rates of payment may be reduced by the Committee.
The MANOR HOUSE for Ladies only, which is entirely separate from the Hospital and standing in its own grounds, is utilised exclusively for voluntary patients.
For further information apply to ARTHUR TOWNSEND, M.D., the Medical Superintendent.

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HOSPITAL FOR MENTAL DISEASES.
President: The Right Hon. the EARL MANVERS.

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Climate healthy and bracing.
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Private Home for Cure of Ladies and Gentlemen suffering from **Nervous** and **Mental Diseases.** Extensive pleasure grounds. **Private Suites of Rooms** with special Attendants available. **Boarders received** without certificates.
Terms from 4 to 28 guineas weekly. Patients sent for.
Apply, Dr. G. STEVENS POPE or Mrs. POPE, Resident Licensees.

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This Registered Hospital for **MENTAL DISEASES** with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.
For terms, &c., apply to the Medical Superintendent, J. A. C. Roy, M.B., or he may be seen at Northern Assurance Buildings, Albert-square, Manchester, on Tuesdays and Fridays from 11 a.m. to 12.15 p.m. Telephone: No. 163 GATLEY.

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Phone: BEDFORD 3417.] **Near BEDFORD**
For Mental Cases with or without Certificates.
Ordinary terms Five Guineas per week (including Separate Bedrooms for all suitable cases without extra charge).
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FOR MENTAL DISEASES,
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This registered Hospital receives for treatment PRIVATE PATIENTS, of the UPPER and MIDDLE CLASSES of both Sexes. The Hospital, its branches (including a Seaside Home at Llanfairfechan, North Wales), and its numerous Villas are surrounded by over a thousand acres of Park and Farm.
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A PRIVATE MENTAL HOSPITAL FOR THE CARE AND TREATMENT OF MENTAL AND NERVOUS CASES OF BOTH SEXES, EITHER VOLUNTARY OR UNDER CERTIFICATES, preference being given to Recoverable Cases.

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VISITING AND CONSULTING PHYSICIANS—Sir JAMES BARR, LL.D., M.D., F.R.C.P., 72, Rodney Street, Liverpool; G. E. MOULD, Physician for Mental Diseases to the Sheffield Royal Hospital, The Grange, Rotherham.

For further particulars and forms of admission apply Resident Medical Proprietor, Haydock Lodge, Newton-le-Willows, Lancs.

Telegraphic Address: "STREET, Ashton-in-Makerfield." Telephone: 11 Ashton-in-Makerfiel l.

CAMBERWELL HOUSE,

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Completely detached Villas for Mild Cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Croquet, Squash Rackets, and all indoor amusements. Wireless and other Concerts. Occupational therapy. Daily Services in Chapel.

Senior Physician: DR. HUBERT J. NORMAN, assisted by three Medical Officers, also resident.

An Illustrated Prospectus, giving full particulars and terms, may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON.—A Convalescent Branch of the above.

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FOR PRIVATE TREATMENT OF MENTAL DISEASES.

Situated in a large park in a healthy and picturesque locality, easily accessible by rail via Bristol, Winterbourne, Patchway, or Yate Stations. Uncertified Boarders received. For further information see Medical Directory, page 2141. Terms moderate.

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Telephone 51.

A Private Hospital for the Care and Treatment of those of both sexes suffering from Mental Disorders.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

Convalescent Home at Bournemouth standing in 9 acres of ornamental grounds, with tennis courts, etc. Patients or Boarders may visit the above, by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury.

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This HOME has been opened for the Investigation and Treatment of Early Cases of NERVOUS DISEASE. In addition to the neurologist in charge, the services of a visiting staff, consisting of a physician, consulting surgeon, radiologist, ophthalmic surgeon, throat and aural surgeon, and dental surgeon, are available.

A fully equipped laboratory in the care of a clinical pathologist and biochemist is attached, and there is every facility for artificial sunlight, electrical treatment, massage, and medical baths.

Particulars can be obtained from the SECRETARY. *Telegrams:* **Arthington, Torquay** *Telephone:* **St. Marychurch, 7142.**

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KENLAW HOUSE, Colinsburgh, Fife.

A Resident Staff of three Physicians allows of exceptional individual attention, the number of patients being limited to 25.
Unusual opportunities for interesting and useful in- and out-door occupation are included in the psychotherapeutic treatment.
Cases are carefully selected to ensure their suitability to the treatment, and to the social atmosphere of the place.
Two hundred acres of private grounds. First-class private golf course; Granuloid and grass tennis courts, etc. Two billiard tables; large workshop. Electric light, and central heating. Within 20 minutes' drive of St. Andrews. Dry and equable climate.
Inclusive terms from £10 10s. weekly.
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THE ONLY PRIVATE HOSPITAL for the TREATMENT of MENTAL CASES in SCOTLAND

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NEW SAUGHTON HALL, which takes the place of Saughton Hall, established in 1798, is situated seven miles south of Edinburgh, in the beautiful neighbourhood of Hawthornden and Rosslyn, and is surrounded by picturesque and well-timbered pleasure grounds extending to 125 acres.

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Telegrams: "Alleviated, London." **Telephone: New Cross 3416, 3417.**

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Illustrated prospectus and further particulars can be obtained from the MEDICAL SUPERINTENDENT.

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FOR THE TREATMENT OF CASES OF TUBERCULOSIS.

Pleasantly situated on the "Upper Bagshot Sands," 200 feet above sea level, it stands in its own charming grounds facing South and West, and sheltered from the North and East, in a mild and bracing climate.

Trained Nurses on duty night and day. Facilities for Artificial Pneumothorax and other modern methods.

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The first private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiograph, Artificial Sunlight, and Medical Baths.

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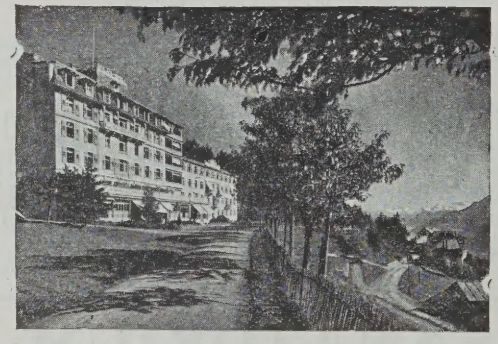

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Modern equipment, including roof solarium, Throat Room, Clinical Laboratory, and recent X-Ray plant.

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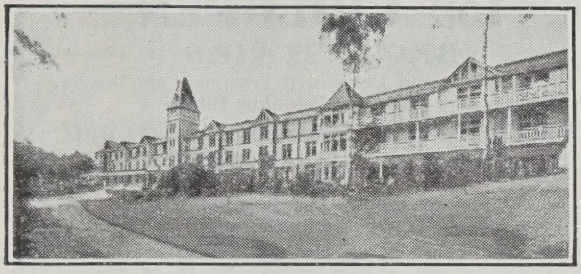

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INEBRIETY.

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For the treatment of Gentlemen under the Act and privately. Established 1883 by an association of prominent medical men and others for the study of inebriety; profits, if any, are expended on the institution. Large secluded grounds on the banks of the river Colne. All kinds of out-door and in-door recreations and pursuits.—For particulars apply to F. S. D. HOGG, M.R.C.S., &c., Resident Medical Superintendent.

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Ladies and Gentlemen treated in small Private Home.
EXCELLENT RESULTS FROM UP-TO-DATE TREATMENT.
MODERATE INCLUSIVE TERMS.
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Ladies only received.

The Grove, Old Catton, Norwich.—**A High-class Home for the Curative Treatment of Nervous Affections. Voluntary Boarders are also received without certificates.**

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All treatments under the direct supervision and control of the physician in charge Medical men sending patients will receive full reports and case cards of treatment

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Nursing Home, Ideal situation, high

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House. INVALID; particular care given Arthritis; catheter case accepted. Not mental or alcoholic. Excellent Doctors. Moderate terms.—18, Hertford-road, Hoddesdon, Hertfordshire.

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For the Early and Preventive Treatment of Disease and Convalescence after Illness.

FOR CHILDREN OF PROFESSIONAL AND WELL EDUCATED PEOPLE OF LIMITED MEANS.

SUBSCRIPTIONS NOT WANTED.

Charge: 21/- a week for each child.

100 Beds. Boys, ages 4-12. Girls, ages 4-14

Usual stay 4 weeks; some wards reserved for serious cases requiring special treatment; for these a lengthened stay may be granted, and the age limit raised to 14 for boys and 16 for girls.

HOSPITAL FACES THE SEA. OPEN ALL THE YEAR

Particulars can be obtained from the Secretary :

116, Victoria Street Westminster, LONDON. S.W. 1.

Charing Cross Hospital.

MEDICAL REGISTRAR.

The Council invite applications for the post of MEDICAL REGISTRAR. Honorarium £150 per annum.

A copy of the regulations can be obtained from the undersigned, to whom applications, together with copies of three testimonials, must be submitted not later than Tuesday, January 4th, 1927.

PHILIP INMAN, House Governor.

Charing Cross Hospital, London, W.C. 2.

London Temperance Hospital,

Hampstead-road, N.W. 1.

Applications are invited for the post of HOUSE PHYSICIAN (Male), which will become vacant on the 15th January, 1927. The appointment is for a period of six months at a salary of £100 per annum.

Candidates must send applications stating qualifications, age, &c., with copies of not more than three testimonials, not later than Friday, 31st December, 1926, addressed to the Secretary.

COMMISSIONS IN THE ROYAL ARMY MEDICAL CORPS

A limited number of COMMISSIONS IN THE ROYAL ARMY MEDICAL CORPS, not exceeding 25, will be offered by nomination in JANUARY, 1927

Nominations have been allotted to the Medical Schools in the list below, and intending candidates should apply to the Dean of their School.

St. Bartholomew's Hospital.
Charing Cross Hospital.
St. George's Hospital.
Guy's Hospital.
King's College Hospital.
London Hospital.
St. Mary's Hospital.
Middlesex Hospital.
St. Thomas's Hospital.
University College Hospital.
Westminster Hospital.

Durham University.
Victoria University, Manchester.
Birmingham University.
Liverpool University.
Leeds University.
Sheffield University.
Bristol University.
Aberdeen University.
Edinburgh University.
Glasgow University.
St. Andrews University.
Dublin University.
Queen's University, Belfast.

In addition, a certain number of nominations will remain at the disposal of the War Office.

The names of gentlemen nominated and applications for consideration should reach the War Office not later than the 10th JANUARY, 1927.

Candidates must be under 28 years of age on the 31st January, 1927, and will be required to present themselves in London for interview and medical examination towards the end of January.

Full particulars as to conditions of service and emoluments in the Royal Army Medical Corps may be obtained on application to the UNDER-SECRETARY OF STATE, WAR OFFICE, WHITEHALL, LONDON, S.W.1.

The Prince of Wales's General

HOSPITAL, Tottenham, N. 15.—Applications are invited for the post of HONORARY ASSISTANT RADIOLOGIST to the above Hospital, to attend three times a week.

Candidates must be fully registered Medical Practitioners.

Applications, stating age and qualifications, together with three copies of recent testimonials, to be sent on or before Monday, January 3rd, 1927, to

December 13th, 1926. FREDK. W. DREWETT, Director.

The Prince of Wales's General

HOSPITAL, Tottenham, N. 15.—Applications are invited for the post of PHYSIO-THERAPEUTIST to the above Hospital. He must be a duly registered (Male) Medical Practitioner, and shall have charge of the Massage, Ultra-Violet Ray and Electrical Departments, attending at least two days a week.

Applications, stating age, and qualifications, accompanied by copies of three recent testimonials, to be sent on or before Monday, January 3rd, 1927, to

December 13th, 1926. FREDK. W. DREWETT, Director.

The Prince of Wales's General

HOSPITAL, Tottenham, N. 15.—Applications are invited for the post of HONORARY ASSISTANT SURGEON. Candidates must be Fellows of one of the College of Surgeons of England, and practising Surgery only.

Applications, stating age and qualifications, and enclosing copies of three recent testimonials, to be sent on or before Monday, January 3rd, 1927, to

December 13th, 1926. FREDK. W. DREWETT, Director.

Metropolitan Borough of Greenwich.

TO OBSTETRIC CONSULTANTS.

The Council of the Metropolitan Borough of Greenwich is prepared to receive offers from recognised Obstetric Consultants, who would be willing to have their names placed on a panel of some two or three members for service when a second medical opinion is required in connection with the treatment of cases of Puerperal Fever and Puerperal Pyrexia occurring in the Borough.

The fee offered by the Council for such services is £3 3s. per consultation, with the addition of £1 1s. for travelling expenses if advice only is needed, and where treatment is carried out a total fee of £5 5s. will be paid.

Communications in respect of the above should be forwarded to the Medical Officer of Health, The Borough Hall, Royal Hill, Greenwich, S.E. 10, from whom any further information may be obtained, and definite applications to be placed on such panel must be received by him not later than Wednesday, the 5th January, 1927.

FREDERICK J. SIMPSON, Town Clerk.

Town Hall, Greenwich-road, S.E. 10,
8th December, 1926.

West London Hospital, Hammersmith, W. 6.

(226 Beds.)—There is a vacancy for appointment as HONORARY SURGEON to the Throat, Nose and Ear Department, for which the present Assistant Surgeon to that Department is a candidate. In the event of his election there will be a vacancy for an Honorary Assistant Surgeon, Throat, Nose and Ear Department, for which post applications are also now invited.

Candidates must be Fellows of one of the Royal Colleges of Surgeons of England, Edinburgh, or Ireland, and must not be engaged in general practice. The successful candidate must be willing, in addition to his other duties, to undertake such teaching for the Post-Graduate College as the Board may approve, and periodically to deliver courses of lectures to Nurses.

Applications, with copies only of testimonials, should reach me not later than Saturday, 15th January. Candidates must attend the Medical Council meeting on Friday, 21st January, at 4.30 P.M., and prior to that date call upon and send copies of application and testimonials to each member thereof. They must not canvass members of the Board, but nevertheless must send copies of application and testimonials to each member thereof, and be in attendance at the Board Meeting on Tuesday, 25th January, at 5 P.M., when the election will be made.

H. A. MADGE, Secretary.

West London Hospital, Hammersmith-road, W. 6.

(226 Beds.) — Applications are invited for the post of HONORARY OBSTETRIC REGISTRAR for a period of one year, eligible for re-election annually. The duties include the preparation of the Obstetric Registrar's Report for the year and the supervision of the records of cases. The candidate appointed must be available as substitute for the Surgeon and Assistant Surgeon for Diseases of Women, and for emergency operations when required, and be prepared to undertake such teaching for the Post-Graduate College as the Board may approve.

Candidates are required to be registered under the Medical Act; to send applications so as to reach me not later than Saturday, 15th January next; to attend the Medical Council Meeting on Friday, 21st January, at 4.30 P.M., and prior to that date to call upon and send copies of application and testimonials to each member thereof; to abstain from canvassing, but nevertheless to send copies of application and testimonials to each member of the Board of Management, at whose meeting on Tuesday, 25th January, at 5 P.M. candidates must be in attendance.

H A. MADGE, Secretary.

Italian Hospital, Queen Square, W.C.1.

The Committee of Management invite applications for the post of ASSISTANT ANÆSTHETIST from fully qualified candidates.

Applications, with testimonials (copies only), should be sent to the Secretary on or before January 8th.

The Infants Hospital, Vincent Square, Westminster.

—The Committee of Management invite applications for the post of ASSISTANT PHYSICIAN.

Candidates must be Graduates in Medicine of a recognised University, and Fellows or Members of the Royal College of Physicians of London.

Applications, with copies of not more than three testimonials, should be addressed to the undersigned, from whom further information may be obtained.

ALFRED J. SMALL, Secretary.

The London Female Lock Hospital,

283, Harrow-road, London, W. 9.—The Board of Management invite applications for the appointment of FIRST HOUSE SURGEON (Male or Female) at the Female Lock Hospital, Harrow-road, W. 9. Salary at the rate of £200 per annum, with furnished rooms, full board, and washing. Candidates, who must be doubly qualified and duly registered, should send in their applications by 10 A.M. on 10th January, 1927, accompanied by copies of three recent testimonials, to the Secretary, from whom further particulars can be obtained. The appointment is for six months, commencing February 1st, 1927.

By order of the Board.

22nd December, 1926. HY. J. EASON, Secretary.

The London Female Lock Hospital,

283, Harrow-road, London, W. 9.—The Board of Management invite applications for the appointment of SECOND HOUSE SURGEON (Male or Female) at the Female Lock Hospital, Harrow-road, W. 9. Salary at the rate of £150 per annum, with furnished rooms, full board and washing. Candidates who must be double qualified and duly registered, should send in their applications by 10 A.M. on 10th January, 1927, accompanied by copies of three recent testimonials to the Secretary, from whom further particulars can be obtained. The appointment is for six months, commencing February 1st, 1927.

By order of the Board.

16th December, 1926. HY. J. EASON, Secretary.

County Borough of West Ham.

PLAISTOW FEVER HOSPITAL.

SECOND ASSISTANT MEDICAL OFFICER (Male) required. Appointment will be for one year. Salary £300 per annum, including bonus on Civil Service Scale which is approximately £100 per annum at present, together with residence, board, and laundry. Preference will be given to candidates who have held a Resident appointment in a General Hospital. Good facilities for Post-graduate study, such as the D.P.H.

Applications, with copies of three recent testimonials, to be sent to the Medical Superintendent, Plaistow Fever Hospital, London, E. 13.

Salford Education Committee.

ASSISTANT SCHOOL MEDICAL OFFICER.

Assistant School Medical Officer required. Commencing salary £600. Last date for receiving applications, 5th January, 1927. Particulars from Secretary for Education, Education Office, Chapel-street, Salford.

Royal Hospital, Richmond, Surrey.

HOUSE SURGEON wanted (Male) to act as Junior from 1st February to 31st March, 1927, and after that date to take the Senior position for a further six months. Salary as Junior £100 per annum, and as Senior £150 per annum, with board, furnished apartments, and laundry.

Candidates must be fully qualified and registered. Applications, stating age, experience, and three copies of recent testimonials, must be forwarded to me as soon as possible.

RICHARD ALLEN, Secretary.

Royal Hospital, Richmond, Surrey.

The Committee of Management invite applications for the appointment of an HONORARY SURGEON for the Out-patients' Department.

Particulars can be obtained from the undersigned, to whom applications should be sent.

RICHARD ALLEN, Secretary.

Hull Royal Infirmary. — Wanted,

ASSISTANT HOUSE SURGEON (Male). His duties will be mainly in the Ophthalmic and Ear, Nose and Throat Departments. Salary £150 per annum, with board and residence. Applications, with testimonials, must be received by the first post on or before Wednesday, the 29th December, 1926, addressed to the Secretary, Hull Royal Infirmary.

Royal National Hospital for Consumption

TION AND DISEASES OF THE CHEST, Ventnor, Isle of Wight.—A Male JUNIOR RESIDENT MEDICAL OFFICER required, of British nationality.

The appointment will be for six months in the first instance.

Salary £300 per annum, with board and residence in the Hospital.

Candidates must be doubly qualified, registered, and unmarried.

Previous Hospital experience desirable.

Applications, stating age and qualifications, with one copy of three recent testimonials, should be sent at once to the Medical Superintendent, Royal National Hospital for Consumption, Ventnor, Isle of Wight.

Dated 14th Dec., 1926.

Administrative County of London.

The London County Council invites applications for appointment as MEDICAL OFFICER (part-time) at the Homerton Residential School for Deaf Children, Penn, Bucks (Staff, 8; Resident pupils, 80). Candidates, who may be of either sex, must be registered Medical Practitioners, and the person appointed will be required to work under the supervision of the Council's Medical Officer.

The salary attaching to the position is £40 10s. a year, plus 11s. a head a year for each person entitled to medical attendance beyond 30. No additional allowance will be made for travelling expenses. All medicines, drugs, &c., will be supplied by the Council. Other things being equal, preference in the case of male candidates to those who served or attempted to serve with H.M. Forces.

Applications, stating qualifications and experience, and enclosing copies of three testimonials, must be addressed to the Education Officer (S.S.2), The County Hall, Westminster Bridge, S.E. 1, not later than 15th January, 1927, from whom further information may be obtained by sending a stamped addressed foolscap envelope.

Canvassing disqualifies.

MONTAGU H. COX,
Clerk of the London County Council.

County Council of Essex and Urban

DISTRICT COUNCIL OF DAGENHAM.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH AND ASSISTANT COUNTY MEDICAL OFFICER.

Applications are invited for the following appointments:—

(*a*) Medical Officer of Health for the Urban District of Dagenham. Salary per annum £550.

(*b*) Assistant County Medical Officer for the Urban District of Dagenham. Salary per annum £250.

Office accommodation and necessary clerical assistance will be provided in connection with the appointments. An allowance will be made for travelling expenses.

The appointments are subject to the approval of the Ministry of Health, and subject to the conditions set out on the front page of the form of application.

Applicants must be duly qualified Medical Men with experience in Public Health duties, and hold a Diploma of Public Health. Applicants should not be over forty-five years of age.

Applications on the prescribed form, which may be obtained from the undersigned, John H. Goold, accompanied by copies of not more than three recent testimonials, which will not be returned, should be addressed to the undersigned, John H. Goold, and delivered at the Shire Hall, Chelmsford, not later than 10 A.M. on Thursday, the 6th day of January, 1927.

JOHN H. GOOLD,
Clerk to the County Council.
W. H. BROWN,
Clerk to the Urban District Council of Dagenham.
Shire Hall, Chelmsford, 13th December, 1926.

Worcestershire County Council.

ASSISTANT COUNTY MEDICAL OFFICER.

The above-mentioned Council are about to appoint an Assistant County Medical Officer, and applications are now invited for this post.

Applicants must be registered Medical Practitioners between the ages of twenty-five and forty-five years. Special experience and qualifications in Tuberculosis will be desirable, as work under the County Tuberculosis Scheme will form the chief part of the Officer's duties. A Diploma in Public Health is desirable. The Officer who is appointed will work under the supervision of the Chief Tuberculosis Officer; will be required to reside in the District assigned by the County Council, and to devote the whole of his time to the work.

The salary will be £600 per annum, with an allowance of £140 per annum for use of own car, or a car will be supplied for County work. A subsistence allowance when away from home on County business will be made. The engagement to be subject to three months' notice on either side.

Applications (on forms to be obtained from the Acting County Medical Officer, 29, Foregate-street, Worcester), accompanied by not more than three recent testimonials, must be received by 12 noon on Monday, the January 3rd, 1927, addressed to the Acting County Medical Officer, 29, Foregate-street, Worcester.

Canvassing disqualifies, and neither the names of the members of the County Council nor of the Committee will be supplied.

(Signed) C. H. BIRD,
Clerk of the County Council.
Shirehall, Worcester, December 13th, 1926. [R.8].

Bedford County Hospital.—House

SURGEON, ASSISTANT (Male), unmarried, fully qualified, required for a term of not less than six months, commencing January 1st, 1927. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, and full particulars of early and later education, together with three recent testimonials, to be sent to

THE SECRETARY,
The Medical Staff Committee, Bedford County Hospital.
December 13th, 1926.

Royal Devon and Exeter Hospital,

Exeter. (200 Beds.)

SENIOR HOUSE SURGEON.

Applications are invited for the post of Senior House Surgeon (Male) which will become vacant at this Hospital on January 6th, 1927. The appointment is for twelve months, but candidates are eligible for re-election.

Salary at the rate of £210 per annum, with board, apartments, and washing.

Applications, giving full particulars as to age and qualifications, together with certificate of registration and copies of three recent testimonials, should be sent to the undersigned on or before Friday next, 31st inst.

By order of the Committee.
December 20th, 1926. S. S. COLE, Secretary.

County Borough of Oldham.

PUBLIC HEALTH DEPARTMENT.

ASSISTANT MEDICAL OFFICER AND ASSISTANT TUBERCULOSIS OFFICER.

Applications from qualified Medical Men are invited for the position of Assistant Medical Officer of Health and Assistant Tuberculosis Officer.

Applicants must have special experience in Tuberculosis work. The Officer appointed will be required to reside within the Borough.

Salary £750 per annum.

Applications upon forms to be obtained from the Medical Officer of Health, Town Hall, Oldham, must be returned to him, accompanied by not more than three recent testimonials, not later than January 1st, 1927.

Canvassing in any form will disqualify.

JAMES B. WILKINSON, Medical Officer of Health.
Health Offices, Town Hall, Oldham.

Corporation of Calcutta.

Applications are invited for the post of the HEALTH OFFICER of Calcutta. The selected candidate must devote his whole time and attention to the duties of his office and will not be allowed to take up any outside work. He must be legally qualified for the practice of Medicine, Surgery, Midwifery, and must also be registered in the Medical Register as the holder of a Degree or Diploma in Sanitary Science, Public Health or State Medicine, under Section 21 of the Medical Act of 1886, or must possess a Diploma in Public Health of any Indian University. He must also possess at least ten years' practical experience as a Sanitarian or as M.O.H. of a city containing a population of at least 100,000 and should be able to administer the various departments employed on the sanitary works of a large city.

The pay of the post will be Rs.1,500/-p.m., rising to Rs.2,000/-p.m., by annual increments of Rs.50/-p.m., plus a motor-car allowance of Rs.100 per mensem. The appointment will be for a period of five years, which may be extended from time to time at the discretion of the Corporation. The appointment is subject to the Provident Fund, leave, and other service rules of the Corporation. At present eight and one-third per cent. of the salary is deducted every month as contribution to the Provident Fund, and an equivalent amount is contributed by the Corporation at the end of the year and is credited to the subscriber's account. The Fund accumulates at compound interest. The selected candidate must keep a motor-car. He may obtain an advance from the Corporation for purchase of a suitable car, recoverable by monthly instalments spread over three years, the whole amount still outstanding to be recovered in the event of his appointment terminating within three years.

Applications, stating age, qualifications and practical experience, together with copies of the most recent testimonials, and also stating relationship, if any, with the Mayor, Deputy Mayor, Councillors, Aldermen and the Officers of the Corporation, should be addressed to the Secretary, Corporation of Calcutta, and should reach him on or before the 13th February, 1927. *A copy* of the application should be forwarded to the undersigned by the 13th January, who will be glad to reply to enquiries and will arrange to interview candidates who appear most suitable at a date and place to be fixed hereafter.

The selected candidate before joining must satisfy the undersigned as to the state of his health.

If selected from outside India, he will be allowed a first-class passage to Calcutta, to be refunded to Corporation if he resigns appointment within two years. He must join within two months of receiving notice of appointment, and will receive half pay for period occupied by journey.

S. W. GOODE, I.C.S.,
c/o Lloyds Bank, (King's Branch),
6, Pall Mall, London.

A Resident Medical Officer (Male) is required for the CARR-BURTON MEMORIAL HOSPITAL, Sackville-road, Hove. Must be unmarried, and under forty years of age.

Salary £150 per annum, with board, lodging, and washing.

Applications, with copies of recent testimonials, should be sent in as soon as possible.

Candidates must prove by reference to the current Medical Register, or by production of a certificate of registration, that they are legally qualified to practise both medicine and surgery.

For further particulars apply to Assistant Secretary, Brighton, Hove and Preston Dispensary, 113, Queen's-road, Brighton.

R. A. DENDY, Honorary Secretary.

Norfolk and Norwich Hospital, Norwich.

APPOINTMENT OF HONORARY RADIOLOGIST.

The Board of Management hereby gives notice that there is a vacancy in the position of Honorary Radiologist, which will be filled on Saturday, 29th January, 1927, at 12.30 P.M.

Candidates for the office of Radiologist must be Medical Practitioners, registered according to the provisions of the Medical Act.

Applications, with copies of testimonials, must be sent not less than fourteen days before the day of election to the undersigned, from whom further particulars regarding the post may be obtained. By order,

FRANK INCH, House Governor and Secretary.

24th December, 1926.

Borough of Hyde.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH.

The Town Council of the Borough of Hyde invite applications for the position of Part-time Assistant Medical Officer. The person appointed will be expected to assist the Medical Officer of Health in the discharge of the duties of the following offices :—

(1) Medical Officer of Health for the Borough.
(2) Medical Superintendent of the Infectious Diseases Hospital.
(3) Medical Superintendent of the Tuberculosis Hospital and General Tuberculosis Officer.
(4) Police Surgeon.
(5) School Medical Officer.
(6) Maternity and Child Welfare Officer.

The salary of the Assistant Medical Officer will be £300 per annum.

The person appointed will be required to devote approximately half his or her time to the duties of the said offices. Applications (with copies of recent testimonials), endorsed "Assistant Medical Officer," must be sent to me at the Town Hall, Hyde, not later than noon of Thursday, the 6th day of January, 1927.

Canvassing Members of the Council is prohibited.

Dated this 22nd day of December, 1926.

Town Hall, Hyde. THOMAS BROWNSON, Town Clerk.

Far East.—Foreign appointment, £800 a year. View to Partnership. English or Scotchman required, age 26–30 (about). Some experience.—Apply, S. M., Mr. Percival Turner, 4, Adam-street, Adelphi, W.C. 2.

For Locum Tenens

APPLY TO

MR. PERCIVAL TURNER, LTD.,

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4, ADAM-STREET, STRAND, LONDON, W.C. 2.

Telegrams: "Epsomian London."

Telephone: Gerrard 0399.

Retired Service Medical Officer wishes to obtain some employment; either an institution, general practice or opening for a practice.

Age fifty-four, married, no family; is good all-round practitioner, much experience in administration, special practical knowledge of major surgery and tropical diseases, also working knowledge of bacteriology.

Not afraid of work, money not chief object, and SMALL REMUNERATION ACCEPTED. Highest medical and lay references

Address, No 618, THE LANCET Office, 423, Strand, W.C. 2.

Doctor recommends Part-time Secretary (Shorthand-typist, portable machine), mornings, afternoons or evenings.—Address, No. 630, THE LANCET Office, 423, Strand, W.C. 2.

Wanted in North Devon good Middle-class PRACTICE or PARTNERSHIP returning from £1200 to £1500. Applicant has ample capital available.—Apply, No. 3951, c/o Percival Turner, 4, Adam-street, Strand, W.C. 2.

Wanted, experienced Partner in good-class Practice near London. Irish Protestant, Belfast University. Married preferred, not over thirty-five years.—Address, No. 629, THE LANCET Office, 423, Strand, W.C. 2.

Wanted, Panel and Mixed Practice in London or large Town. Income £1500 or more. Cash ready for immediate purchase.—Apply, No. 3652, Mr. Percival Turner, 4, Adam-street, Strand, W.C. 2.

To Sell your Practice or obtain a PARTNER, ASSISTANT OR LOCUM TENENS

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ARNOLD & SONS

(John Bell & Croyden, Ltd.)

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8, WELBECK-STREET, WIGMORE-STREET W. 1.

Mr. W. H. GRANT, Manager.

Telephone: Langham 3000.

Telegrams: Instruments, Wesdo, London.

To Purchasers.—Do not Buy without expert assistance. With forty years' experience, Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam-street, Strand, W.C. 2. Telephone: Gerrard 0399. Telegrams: "Epsomian, London."

IMPORTANT TO VENDORS

The Bovril Medical Agency make a MAXIMUM CHARGE OF **£50** ONLY ON ALL PRACTICES OR PARTNERSHIPS PLACED EXCLUSIVELY IN THEIR HANDS.

Aldine House, 10–13, Bedford-street, Strand, W.C. 2.

Telegrams:	Telephone:
Bovmedical, Westrand-London.	Gerrard 3543 (3 lines).

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best practices are sold by him without being advertised.—Full information free on application to 4, Adam-street, W.C. 2.

Birmingham.—Delightful suburb within 7 miles. Good class long-established PRACTICE. Panel 1000. Income £1400. Exceedingly nice house, with garden, good schools. Doctor taken suddenly ill. One and a quarter years' premium for immediate sale.—Apply, "Medico," 144, Edmund-street, Birmingham.

For Disposal, exceptional opportunity, NUCLEUS in group of villages near large Town, East Anglia. House available. No opposition for three miles. Small premium.—Apply, No. 8030, c/o Mr. Percival Turner, 4, Adam-street, Strand, W.C. 2.

North Midlands.—County Town. Small Middle-class PRACTICE. Receipts about £550 per annum. Panel 500; appointments £200. Well-situated ten-roomed house to be let or sold. Scope for great increase. Premium £750.—Apply, Peacock & Hadley, 19, Craven-street, Strand, W.C. 2.

London, West.—Death Vacancy.—Average £1000 per annum. Visiting fees 7s. 6d. to 3 guineas. Non-panel, non-dispensing. House with 6 bed, 3 reception-rooms, &c., to rent at £100 per annum. Branch consulting-rooms. Premium £1000 cash.—Apply, No. 8036, c/o Percival Turner, 4 Adam-street, W.C. 2.

To Let.—A good opportunity, over 40 years a Doctor's SURGERY, will be vacant early in the new year; also nicely furnished ROOMS with same in a Lancashire town. Population 60,000. Residential district. —Further particulars, Mayfield, 133, Walmersley-road, Bury.

Gower Street.—The Direct Bedford LEASE of an imposing building containing about 15 rooms and ample domestic accommodation for disposal.—Apply, Browett, Taylor & Co., 3 & 4, Lincoln's Inn Fields, W.C. 2.

H. Ley Clark & Barff, House and Consulting-room Agents, 3A, Wimpole-street, W. A quarter of a century's experience with the medical specialist. List of Houses, Consulting-rooms, and Nursing Homes free on application. Tel.: Langham 1095.

Medical Surgical Sundries, Ltd. Attaché Cases, Emergency or Midwifery; Vaccination Case. Major Operation Cases, 9 guineas. Instruments and Dressings, List on application. Showroom: 97, Swinderby-road, Wembley.

NAMEPLATES in **untarnishable** fumed **Bronze**, ivory Enamel lettering; need no daily cleaning; conspicuous but strictly professional; sample sent; state size; also Consulting-room or Surgery Notices in embossed white letters on black card.—Macphail Ltd., 18A, Sauchiehall Lane, off Renfield-street, Glasgow.

Foot Troubles Ended

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LONDON, N.—Nucleus G.P. in rapidly growing locality. Small house with lease of 75 years to run. Income at present £100 p.a., in addition to which there is a panel of 200. Fees 2s. 6d. up. Scope for Midwifery. Premium £200 for practice, £850 for house.

HOME COUNTIES.—PARTNERSHIP in old-estab. Practice. Receipts over £3500 p.a. Growing panel of 2400. Premium for 1/3 share, 2 years' purchase. Preliminary Assistantship.

MIDLANDS.—PARTNERSHIP with view to Succession in well-estab. G.P. Receipts over £1200. Panel 700. Premium for 1/2 share, 1¾ years' purchase.

MIDLANDS.—PARTNERSHIP in well-estab. non-panel G.P. Receipts £8000 p.a. 1/4 Share is offered at 2 years' purchase to an experienced practitioner, aged 30/40.

LANCS.—Well-estab. Country Town PRACTICE with charming house and grounds. Receipts over £1400 p.a. 3 appts. Panel over 800. Premium for freehold house, grounds and practice, £4000.

LONDON (Essex Suburb).—Lock-up Surgery excellently situated in thickly populated district at low rental on lease. Receipts £4/£5 per week. Growing panel of 60, scope for development. Premium £250, inclusive.

DURHAM (Sea Coast).—Well-estab. rapidly growing G.P. Excellent house. Receipts £1540. Growing panel of 1100. 2 appointments. Premium £6000, to include house, practice, furniture, &c.; part down, balance by arrangement. Open to offer.

LONDON, E.—Nucleus G.P. situated in thickly populated district. Lock-up Surgery; caretaker on premises. Receipts £500 p.a. Growing panel of 150. Premium £500, or offer.

LONDON, S.E.—Well-estab. non-panel PRACTICE situated in pleasant residential district. Detached 10-roomed house held on lease with about 45 years to run. Receipts approximately £400. Fees 2s. 6d. up. Premium for practice and house £1600.

CHANNEL ISLES.—Well-estab. G.P. situated on main thoroughfare. Receipts over £400. Fees 2s. 6d. 3 appointments worth £170 p.a. Scope for surgery and increasing practice. Open to reasonable offer.

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Usual list next week.

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The commission chargeable in respect of any Practice or Partnership in Great Britain placed exclusively in the hands of this Agency has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being fifty pounds (£50).

NO CHARGE IS MADE TO PRINCIPALS FOR THE INTRODUCTION OF LOCUM TENENS OR ASSISTANTS.
Accountancy and Legal Services furnished by the Agency, where desired, at moderate inclusive charges.

PRACTICES AND PARTNERSHIPS FOR SALE.

1. HOME COUNTY. — Delightful district. Old estab., unopposed Country PRACTICE worth nearly £1100 per annum, including panel of over 700 and transferable appts. about £200. Fees 2s. 6d. to 15s., medicine extra. Midwifery from 2 gns., 10 cases yearly. Nearest opposition 6 miles. Railway station in place. Excellent up-to-date house with 3 reception, 6 bedrooms, &c., and usual offices. Garden with tennis court and orchard of 2 acres. Garage for 2 cars. Rent on lease (19 years to run) £120. Premium 1½ years' purchase.
2. LONDON, S.W.—Riverside Suburb.—Old-estab., non-panel, non-dispensing, Upper Middle-class PRACTICE, producing an income of over £3000 p.a. Fees from 7s. 6d. to 21s. About 12 Midwiferies yearly from 7 gns. upwards. Good house with 3 reception, 6 bedrooms, &c.; on long lease; rent £180. Good garden. Garage. Prem. £6000.
3. SOUTH AFRICA (Cape Province).—Well-estab. PRACTICE in a small Town with large surrounding district in an ideal climate, equable, sunny and dry and suitable for anyone in delicate health. Receipts last year over £700. Opposition not strong. Small pleasant bungalow residence on lease at a rent of £85 10s. p.a. Prem. £500.
4. GOOD HOSPITAL TOWN, within a few miles of the borders of Herefordshire.—Old-estab. mainly good-class non-dispensing PRACTICE. Income over £1400, including about £130 from appts. and panel of 450. Consultations 5s. to 10s. 6d.. Visits 7s. 6d. to 2 gns. Little Mid. Good house in centre of town, with ¼ of an acre of garden. Price freehold £1500. Prem. £2000. Exceptional scope for surgery.
5. SOUTH WALES COAST.—Hospital Town.—PARTNERSHIP.—A One-third Share, producing an average income of over £1550, is for disposal in an old-estab. Mixed-class Practice. Total panel of 2700, and appts. worth about £100. Fees 3s. 6d. to 5s., with medicine extra. Midwifery from 3 gns.: 35 to 40 cases yearly. Good house with separate entrance to professional rooms. Price for leasehold (over 60 years) £1800, part on mortgage. Sport of all kinds. Premium for share £1700.
6. MANCHESTER.—RESIDENTIAL SUBURB.—Old-estab. non-dispensing, non-panel PRACTICE. Steady average income of over £1250 with scope. Fees 3s. 6d. to 12s. 6d. No Midwifery. Good well-situated corner house. Garage. Garden. Freehold, price £2900. Prem. 1½ years' purchase.
7. CHESHIRE.—Non-dispensing and non-panel PRACTICE situated in a small pleasant country town of 10,000 inhabitants, and worth for last financial year £700. Vendor is a lady doctor, but states it is equally suitable for a medical man. Opposition very weak. Visits 5s. to 21s. Midwifery discouraged. House contains consulting, dining and drawing rooms, 4 bedrooms, bathroom, &c. Small garden. Would be let on lease at £90 p.a. Price for practice £1000. Good future propects.
8. MOROCCO.—Coast Town. — Mixed General PRACTICE producing an income of about £1000 p.a. Fees from 6s. 6d. to 2 gns. No Midwifery. Very low expenses. Excellent social and sporting facilities. Ideal climate. Convenient house, Can be rented at £66 p.a. Prem. to include goodwill, all furniture and fittings, drugs and equipment, &c., £1500.
9. PARTNERSHIP.—Pleasant Residential district within 12 miles of London. Owing to the retirement through ill-health of one of 3 partners, a well-qualified gentleman (30 to 35 years of age). can acquire a third Share in a very old-estab. Practice worth last year nearly £6000, including appts. and panel of 1500. Patients all classes. Visits 5s. to 21s., medicine mostly extra. Mid. 3 to 20 gns., 50 cases yearly. Suitable house available. Rent £140. Premium £4000. Cottage Hospital. Good society. Educational facilities, golf, tennis, &c.
10. CORNWALL.—Country PRACTICE.—Very old-estab., and patients are chiefly agricultural. Income for the immediate past year nearly £1400, including panel of about 750. Lowest fee 5s. Convenient house with 2 reception, 5 bedrooms, &c., surgery and waiting-room; rent on long lease £45 p.a. Sport of all kinds. Premium £1850, £1500 down and balance as arranged.
11. SOUTH CORNWALL.—Very attractive small Coast Town —Old-established General PRACTICE. Income last year over £1400, including £60 from appointments. Panel of between 400 and 500. Fees 2s. 6d., 5s. to 21s. About 20 cases of Midwifery yearly at 3 to 7 guineas. Well-situated semi-detached house with 2 reception and 7 bedrooms; small garden. Price £1600. Premium £2000.
12. RESIDENTIAL SUBURB (South of Thames).—Very old-established and mainly Homœopathic PRACTICE held 26 years. Cash receipts average about £1300 p.a., including panel of 270. Visits 5s. upwards (few at 3s. 6d.). Midwifery 3 to 4 gns.; few cases yearly. Very good house with ample accommodation and standing in one-third acre of ground; rent on lease £100 p.a. Prem. £1800. Scope.
13. PARTNERSHIP.—LONDON, N.W.—Pleasant Suburb.—Third share of old-established Mixed-class Practice, worth last financial year nearly £2500, including panel (increasing) of 3050. Visits 3s. 6d. to 10s. 6d. Midwifery for the past 12 months refused. Expenses light. Suitable accommodation (7 rooms) available for ingoing partner; rent £52 a year, including rates and taxes. Premium £1500.
14. NEAR PETERBOROUGH.—Well-established unopposed PRACTICE, producing an income of about £2000 a year, including panel of 1400 and appointments. Commodious house with 2 reception and 7 bedrooms, professional rooms, &c. Large house with two acres of ground, tennis court. It is in good repair and can be rented at £100 per annum. Very suitable for active man, or two friends in partnership. Premium 1½ years' purchase. Ill-health reason for sale.
15. EASTERN COUNTY. — Near Coast. — Old-established Better- and Mixed-class PRACTICE. Steady average income for last 3 years of £2000, including panel of nearly 1600. Fees 2s. 6d. to 10s. 6d. Very good house with 3 reception and 6 bedrooms, attics, &c. Separate entrance to surgery and waiting-room. In own grounds of 4½ acres. Garage. Price for freehold £3000, half of which could remain on mortgage. Premium £3000.
16. SURREY.—In a beautiful residential district within 40 miles of London (good train service), a small good-class PRACTICE worth between £600–700 p.a., and offering scope. Midwifery refused and panel not encouraged. Charming house, with ample accommodation, in very pretty grounds of nearly 5 acres. Price freehold £4500, or less with reduced acreage. Premium 1½ years' purchase.
17. LONDON, S.W.—Open Residential Suburb.—Old-estab. Middle-class non-panel PRACTICE, held over 20 years by Vendor. Receipts for past 3 years average £2063 p.a. Visits 5s. 6d. to 10s' 6d. Mid. 5 and 6 gns; under 10 cases yearly. Good corner residence (non-basement) with 11 rooms, bathroom, &c., and small garden. Held on exceptionally long lease at the very low rental of £60 p.a. Prem. £3350. Efficient introduction. Satisfactory reasons for selling. The practice is considered eminently transferable, and there are good prospects of increase.
18. PARTNERSHIP.—MIDLANDS.—In prosperous district, with pleasant surrounding country, the Third Share, producing about £700 p.a., which will be guaranteed, of an old-estab. increasing Practice, is for disposal. Panel nearly 2000. Patients middle- and working-class. Very nice house, in good repair, containing 2 recept., 4 bedrooms, bathroom, &c.; nice garden, rent on lease £40 p.a. Prem. £1400, half down and balance as arranged.

WANTED TO PURCHASE.

1. LONDON, W. or S.W.—Cash and Panel PRACTICE producing about £2000 a year, Convenient house with 5 or 6 bedrooms, preferably on rental.
2. RESIDENTIAL SUBURB OF LONDON.—Better-class PRACTICE, Income from £1800 to £2000 p.a. Good house and garden and garage for 2 cars if possible.
3. SOUTH OF ENGLAND.—PARTNERSHIP in Upper Middle-class Practice, offering good scope for surgery and chance of Hospital appt. Income about £1200.
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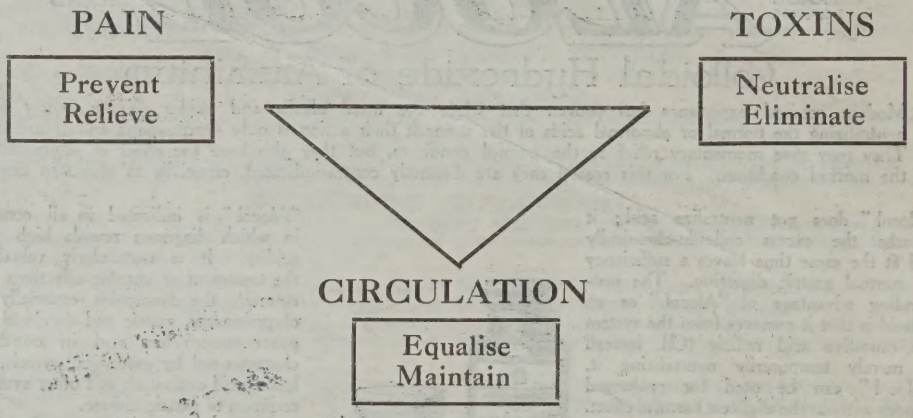
THE TRIAD OF TREATMENT IN PNEUMONIA



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